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THE ADDRESS IN OPHTHALMIC SURGERY.

BY

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[*Concluded from page 735.*]

STAPHYLOMA. The ordinary operation for the relief of staphyloma consists in the excision of the projecting mass anterior to the corneo-sclerotic junction, with an ordinary cataract knife, toothed forceps and scissors. If the incision is practised through the sclerotic, hæmorrhage often occurs, and indeed, is not an uncommon occurrence when the incision passes through the corneal tissue only, and is due to the sudden removal of support from the choroidal vessels.

Some years since, Mr Wilde recommended that, before the staphylomatous mass is excised, a thread or two should be passed through the cornea at the base of the projection, and that by subsequent ligature, the lips of the wound should be closed. Very recently, Mr. Critchett has advised, that the conjunctiva should be dissected back from the base of the staphyloma, two, three, or more, curved needles passed through the cut conjunctival edges, and that after the excision of the projection, the conjunctival edges should be brought in contact and secured by ligature. This operation, which he calls abscission of staphyloma, he has employed several times. He claims for the plan these advantages:—prevention of too profuse evacuation of the vitreous, diminished probabilty of hæmorrhage, shortening of the period of convalescence by the frequent occurrence of union by the first intention, a more sightly atrophied eye-ball, and a better stump for the use of an artificial eye. After the operation, pressure with a pad of cotton wool placed on the eye, should be sustained for forty-eight hours.

ACUTE IRITIS. In the *Archiv für Ophthalmologie*, Professor Von Gräfe strongly advocates the bold use of mydriatic remedies in acute iritis, which he states greatly diminishes its dangers. According to his theory, although mercury, antiphlogistics and other remedies are very useful, still of themselves they are insufficient to effect a perfect cure. Mydriatics are indispensable to complete success. He further says, chronic or recurrent iritis depends on the residua of the first attack (*i.e.*, adhesions) not on internal causes. Colds, congestions, etc., may excite, but the true cause is in the eye itself.

Recurrent iritis is rare, if the cure of the first iritis is complete, is rather rare if the adhesions are few and long, but constant, almost necessary, if the adhesions are short and extensive, and certain, if complete synechia posterior has occurred.

Gräfe has proved these positions by experiment; thus, in double iritis he has often treated one eye antiphlogistically, and the other simply with mydriatics or with mydriatics and antiphlogistics combined. If the first eye recovered with posterior synechia, recurrence took place, but if the second eye recovered without adhesions, then no recurrent iritis ensued. Hence he asserts that the principal cause of recurrent iritis is the existence of synechia posterior, especially if broad and inextensible.

His mydriatic treatment consists in the use of a solution of the disulphate of atropia, four grains to the ounce of water. In slight iritis, he uses it six, eight, or ten times daily, with intervals of five minutes. The iris slowly dilates, detaching plastic exudations and adhesions. Pain is no counter-indication to its use, as pain and inflammatory symptoms are relieved by it.

In acute iritis with chemosis, cloudiness of the aqueous humour, etc., it is often necessary for two or three days to precede the treatment by leeching, paracentesis, and, in very acute exudatory iritis, by mercurials. When the hyper-acute stage has somewhat subsided, he employs the mydriatic most energetically, instilling it twenty or thirty times daily into the eye, to produce even a limited dilatation of the pupil. By persistence, the recent synechiæ are broken down and destroyed. The pupil must be kept dilated for some weeks after the subsidence of inflammation.

It sometimes happens that the application of the atropia to the conjunctiva becomes unbearable. In such cases, the tone of the membrane must be altered by solutions of acetate of lead or nitrate of silver; and then in a few days the treatment can be resumed.

Gräfe proceeds to lay down a second law, that the exclusion of the pupil is the point from which other complications proceed, especially chronic choroiditis.

IRIDECTOMY. It has been for some years an established fact that the medical treatment of total exclusion of the pupil from synechia posterior, and of glaucoma, is almost useless. Painfully impressed with this belief, Dr. Gräfe has adopted as a surgical cure the operation of iridectomy, which, first introduced by Desmarres, has been much modified and perfected by him. Its object, as its derivation implies, is to excise a certain portion of the iris.

Gräfe performs it thus. A broad lancet-shaped or Beer's knife is entered through the sclerotic half a line from the cornea, and punctures the organ at the junction of the two. Through this opening, the aqueous humour escapes, and the iris protrudes towards it. A fold of this structure is seized with suitable forceps, withdrawn, and excised close to the wound, so as to remove the whole piece of iris between the wound and pupil. In ordinary cases, the portion removed should be equal to one-sixth of the total, but in very severe cases should be larger. The aqueous humour should be evacuated slowly; otherwise, from sudden loss of intraocular pressure, large hæmorrhage may ensue into the cavities of the eye.

After the operation, graduated pressure should be maintained for a few hours with a soft cotton pad and bandage. Gräfe usually excises the nasal side of the iris; but this is unimportant. Mr. Critchett has somewhat modified this procedure, by puncturing the organ through the cornea, and thus not interfering with the sclerotic. In either way, the same result is well attained.

Gräfe employs iridectomy in total exclusion of the pupil from iritis, and particularly insists upon it when its legitimate consequence, irido-choroiditis, occurs. He also uses it in the premonitory stage of acute glaucoma, in the acute stage of inflammatory glaucoma, in the later stage of inflammatory glaucoma, and in chronic glaucoma.

In total exclusion of the pupil, and choroido-iritis, he obtained as results great improvement of vision, reformation of the anterior chamber, free communication between the two chambers; besides which, the iris resumed its normal texture and position, and the eye remained free from inflammation. He is of opinion that the improvement does not arise so much from resorption of the pupillary exudations as from improvement in the choroidal complications; in fact, if performed before the occurrence of choroido-iritis, this is prevented; and if afterwards, that the choroido-iritis is relieved or cured, and its ulterior effects, atrophy of the globe, prevented. Moreover, the tendency to recurrence of the iritis is removed, and the neuralgiæ, or, as Gräfe terms them, the ciliary neuroses, cured; and this latter advantage has even occurred when no benefit as regards vision has taken place.

IRIDECTOMY IN GLAUCOMA. Even in the premonitory stage

of acute glaucoma, Gräfe performs iridectomy. He considers it imperative when one eye has become blind, and the premonitory symptoms of the disease have commenced in the other (such as obscuration of sight, chromopsiæ, ciliary neuroses, etc.), to operate upon the second without delay. This, the early stage, he selects as the most favourable for the display of the proper results of the operation. In this stage, he has often obtained a complete cure. Gräfe has had large experience of iridectomy in the acute stage of glaucoma. When he first practised it, he was accustomed, in very severe cases, to attempt to alleviate the acute inflammatory symptoms by antiphlogistics and opiates. Of late, he has operated when the inflammatory symptoms have been at their height, and finds iridectomy the most certain antiphlogistic. The chief result, as regards vision, occurs in two or three weeks. The ciliary neuroses cease immediately after the operation. The tension of the globe speedily subsides, and retinal ecchymoses disappear in the course of a few weeks. Many cases were perfectly cured.

In the later period of acute glaucoma, the operation is not so happy in its results; still it offers great advantages, and far greater than those which can be obtained by medicine. Thus, in most cases, the symptoms of irritation subside rapidly; the pupil becomes somewhat smaller; the hardness of the globe and the discoloration of the iris diminish. The refractive media become more transparent; and the ciliary neuroses are relieved—generally cured. Vision, in a few instances, has resumed nearly a normal state. Generally it has considerably improved, while in some cases the improvement has been temporary. In exceptional cases, no improvement has taken place.

In chronic glaucoma, iridectomy does not produce such decisive results as in the acute disease; still it exerts a favourable influence, and often beyond the expectation of the operator. Gräfe has seen considerable and permanent improvement accrue after the disease has existed some years. He considers those conditions most favourable for the operation which indicate that the blindness arises from intraocular pressure. Thus, hardness of the globe, dilatation of the pupil, flattening of the anterior chamber, and anæsthesia of the cornea, when combined, strongly evidence intraocular pressure, and give a better chance to iridectomy, than when the impairment of vision occurs without these distinctive symptoms.

Briefly to recapitulate. The curative influence of iridectomy is most certain when, one eye being blind of acute glaucoma, the second is attacked by premonitory symptoms. In acute cases which speedily destroy sight, the operation must be performed during the first days of the disease; and when glaucoma has set in, the results are the more favourable, the earlier it is performed.

In the later stages of acute glaucoma, and in the chronic form of the malady, when vision is nearly extinct, the issue of iridectomy is uncertain. The improvement of vision is often temporary; still its aid is highly valuable, if only to cure the ciliary necroses, which are so painful and harassing to the sufferer. The formation of cataract, one of the last of the series of changes which arise in the organ, can in no way be influenced by iridectomy.

Vividly to depict the importance which its author attaches to this operation, I shall quote his words:—"Unless we are much mistaken, matters have now so changed, an eye which has become blind from acute glaucoma will excite the suspicion of neglect just as much as closure of the pupil after simple iritis, or a badly cured fracture." Strong, forcible words, these, and demand our earnest thought and attention. Again, he says: "Only a glance at the fate of eyes treated by other means is needed, to induce the abandonment of all other treatment of glaucoma than that of the immediate performance of iridectomy."

Now let us speak of the experience of English operators, and that of the surgeons of the Royal London Ophthalmic Hospital in particular. Fortunately, the last two numbers of the *Ophthalmic Hospital Reports* contain a report of seventy-eight iridectomy operations for glaucoma, performed at the Royal London Ophthalmic Hospital, from May 1857 to September 1859 inclusive."

At first, the operation was performed by a corneal incision; but, during the last year, through the sclerotic, as practised by Dr. Gräfe. The opening is usually made opposite the upper part of the cornea, so that the upper lid covers the artificial coloboma. Union of the incision has commonly been effected from the second to the sixth day after the operation. The dulness of the cornea has subsided from the second to the fifth day. In acute glaucoma, the anterior chamber resumed almost entirely its normal size. In chronic glaucoma, it became larger, but seldom was quite reinstated. The pupillary area became clear immediately after the operation, except when internal bleeding or chronic iritis occurred. In many cases, the iris speedily recovered its contractility; in some, especially in old cases, it remained paralysed. The neuralgic or ciliary pain subsided from the second to the sixth day, and rarely recurred. The morbid tension of the globe passed off from the second to the fifth day. The media (or naturally transparent humours) recovered their transparency in about a week. The fundus of the eye could be examined by the ophthalmoscope, and the optic papilla distinguished in about ten days.

In twenty-nine cases of chronic glaucoma, vision was slightly improved in eight, and considerably in two instances.

In twenty-nine of the subacute form, slight benefit was derived in fourteen, considerable in five, and none in ten cases.

In twenty-six cases of acute glaucoma, vision was slightly improved in eight, considerably in twelve, and not at all in six.

Hence the analysis of these results closely agrees with Gräfe's experience; although, as he furnishes no tabular report, it is impossible to institute an exact comparison. Gräfe speaks of his results in glowing and confident terms, and appeals to the students who attend his *clinique*, and to his *confrères*, for the accuracy of his statements.

Before we consider the theory of the treatment by iridectomy, it is necessary to premise a few words on the nature of the disease called glaucoma. Although practical surgeons have recognised certain well marked symptoms as indicative of that destructive disease, which has derived its name from the dull greenish appearance which the eye presents, still it is but very lately that an accurate knowledge of the changes which take place in the organ has been attained.

According to modern notions, its most characteristic symptoms indicate an increase of intraocular pressure. Thus the stony hardness of the globe is remarkable.

The dilatation of the pupil, which is almost constant, depends upon the pressure exerted upon the ciliary nerves during their course to the iris. Insensibility or anæsthesia of the cornea, is also caused by compression of the nerves travelling towards it. The dilatation of the venous trunks, which is a feature of an advanced stage of the malady, favours the idea of mechanical obstruction to the internal circulation.

That the ciliary neuroses depend upon pressure is almost certain, as they are at once relieved by paracentesis or iridectomy.

The two principal ophthalmoscopic signs are, excavation of the optic papilla (which Gräfe says becomes shallower after iridectomy), and arterial pulsation of the retinal vessels, both which are caused by intraocular pressure.

On these facts Gräfe grounds his theory of the treatment. An immediate effect is produced by evacuation of the aqueous humour. The surface which secretes this humour is diminished in proportion to the quantity of the iris excised, and experience demonstrates that the more serious the disease the larger should be the piece of iris removed.

In the *Ophthalmic Hospital Reports*, the following theory is broached.

"It is supposed, that by this operation, the vitreous and aqueous chambers are thrown into one, that the remainder of the iris atrophies, and that the tension of the globe being diminished, the resorption of the fluid effused into the deeper tissues of the eyes is encouraged."

In an interesting letter which Mr. Vose Solomon lately addressed to me, on the surgical treatment of short sight by his new operation, intraocular myotomy (which I shall presently describe), he says:—

"I apply the operation also in cases of glaucoma, and find that the globe loses its hardness, even when the incision has not been followed by an effusion of aqueous humour. My theory is that iridectomy and intraocular myotomy cure glaucoma by in the one instance cutting away, and in the other dividing, some of the ciliary nerves (neurotomy), thereby bringing about a more healthy action in the ciliary ganglion, or in other words, a more normal nutrition. After intraocular myotomy, as after iridectomy, an atrophied globe will become plump. My theory appears to me to explain everything that iridectomy effects, which the exosmosis theory does not."*

* Mr. Solomon has informed us that in cases of conical cornea his operation diminishes the size of the cone, causes opacities, when present, to rapidly absorb, and the patients' vision to improve. Gräfe has obtained a like result by iridectomy. Editor.

This theory, that of modification of intraocular pressure, by the influence of division of the ciliary nerves upon nutrition, through the medium of the ciliary ganglia, deserves investigation, and, indeed, appears to me as plausible, and even more so, than any other theory with which I am acquainted, which attempts to account for the curative influence of iridectomy.

You will reasonably inquire what is my own opinion of iridectomy. Is it to be classed, as some sensible men class it, in the category of medical myths; or is it to be regarded as an operation based upon strictly scientific principles? I confess that my little experience in the matter does not warrant me to attempt a solution of the question. My first thoughts on the operation were inimical to it. It appeared to me that its theory was unsound; that the pathological conditions which it sought to cure were vague and indefinite; and, theoretically, that the operation was incapable of producing the results proposed by, and said to be arrived at by, its originator.

I believe that Dr. Mackenzie, Mr. Walton, Mr. Wilde, and other good surgeons, entertained somewhat similar views; and I have strong reason to think that some, if not all of these gentlemen, still adhere to the same opinion. On the other hand, Professor Von Gräfe, Mr. Bowman, Mr. Critchett, and other able operators, have repeatedly performed iridectomy, and have published their experience, which, in the main, is highly favourable to it.

Under these circumstances, it seems to me but fair to believe the statements of Professor Gräfe and his followers to be correct, until clear and decisive evidence can be adduced to prove that they all have been deceived in their estimate of the value of the operation.*

Myopia. Very recently, Mr. Vose Solomon has devised a new operation for the relief of myopia. He designates it "intraocular myotomy". It consists in a transverse division of some of the fibres of the muscle of the lens—the ciliary muscle. Mr. Solomon does not consider it material which part of the muscle is selected for division, but generally prefers either the upper or lower segment of the circle. Supposing the latter situation selected, and the patient to be seated in a chair, the operator stands behind, and fixes the globe with his left fingers as in extraction, holding a cataract-knife in his right hand. With the flat of the blade directed upwards, he pushes the point in succession through the corneo-sclerotic union, the pillars of the iris, and the ciliary muscle. The direction given to the instrument is obliquely downwards and outwards. Care is taken that the incision in the muscle is of the same length as the puncture of entrance; viz., about two lines, or two lines and a half, in diameter.†

Mr. Solomon has tested the operation upon individuals from the age of twelve to forty-five years. A man of the latter age, who had worn double concave glasses of immense depth (No. 16) for a great number of years, and, unaided by lenses, could see with clearness the features of a person, to know them, at a distance of nine feet only, obtained at once by the operation an increase of seven feet in his focal range. In a child of twelve years of age, the operation increased the reading distance from four to eight inches, and the power of identifying persons' features from twenty to forty yards; and in one of sixteen years, the effect was still more remarkable.

Mr. Solomon states that, in myopic cases, the improvement is progressive. He urges me to test the operation by experience. It appears to me that it should be cautiously adopted; that, to test its value, it should be performed in exaggerated cases, in which much harm could not be done, should the proceeding prove ineffectual. Under such circumstances, I should be disposed to perform it, but should not certainly recommend it to ordinary myopic persons—at least, until it is found to produce certain results.

When I commenced this address, I sketched its programme, and comprised within its limits another important subject—the ophthalmoscope. To the best of my ability, I have epitomised the materials which lay at my disposal, and, indeed, have omitted some subjects which ought to have been touched upon; still my paper is too lengthy. I have therefore determined to leave the consideration of the ophthalmoscope to other and more practised observers, and hope that, at our next anniversary, this interesting and important mode of examining the deep textures of the eye will be brought before the Association, and form the subject of a distinct address.

If I have afforded information to a few here present, stimulated others to investigate, or refreshed the memory of any daily practising ophthalmic surgery, I am amply repaid for the time expended on my subject.

I cannot sit down without expressions of thankfulness that God has endowed our noble profession with the ability, as well as the inclination, to confer vast benefits upon suffering humanity. Time was, when many an intelligent practitioner of medicine gloried in scepticism and infidelity; time is, when his successor, elevated by a better teaching, reverently ascribes to God the glory due unto his name, and humbly adores Him who has bestowed such gifts upon men.

* Since this address was delivered before the British Medical Association, Sir B. Brodie has submitted to iridectomy for glaucoma. Although it appears that the operation has been unsuccessful, still the fact that a man so gifted, and so mature in experience, has allowed its performance upon himself, speaks volumes of his estimate of its expediency and propriety.

† This operation of intraocular myotomy appears to me to differ very little from that which Mr. Hancock practises and recommends for glaucoma.

A Course of Lectures

ON

URINE, URINARY DEPOSITS, AND CALCULI.

DELIVERED AT THE PATHOLOGICAL LABORATORY, DURING THE SESSION 1857-58.

BY

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Lecture VII.

Urine in Disease. *Insoluble Substances in Urine.* 1. *Floating on the Surface, or suspended through the Fluid.* Urinary Deposits. 2. *Light and Flocculent Deposits.* 3. *Dense and Opaque Deposits.* 4. *Granular and Crystalline Deposits.* Examination and Preservation of Urinary Deposits. *Collecting Urine for Microscopical Examination. Period when the Urine should be examined. Removal of the Deposit from the Vessel containing it. Of Collecting a very small quantity of a Deposit from a Fluid. Magnifying Powers required in the Examination of Urine. Of the Chemical Examination of Urinary Deposits. Examination of the Deposit in the Microscope. Of Placing the Deposit in the Preservative Fluid. Refractive Power of the Medium in which Deposits are mounted. Media in which Urinary Deposits may be preserved. Of Keeping the Deposit for subsequent Inquiries. Of Preserving Deposits permanently. Mucus, Epithelium, Fungi, and Vegetable Growths. Spermatozoa. Casts. Pus. Phosphates, Urates, Blood-Corpuscles, Uric Acid, Cystine, Oxalate of Lime. On Preserving Crystalline Substances which are more or less Soluble in Water.* Of Extraneous Matters of Accidental Presence. *Larvæ of the Blow-fly. Hair. Cotton and Flax Fibres. Portions of Feathers. Silk. Fibres of Deal from the Floor. Starch-Granules. Portions of Tea-Leaves. Milk. Sputum. Epithelium from the Mouth. Vomit.*

[*Concluded from page* 738.]

Of Extraneous Matters.

In the microscopical examination of urinary deposits, the observer often meets with substances the nature and origin of which he cannot readily determine. This is due in many instances to the presence of bodies which have fallen in accidentally, or which have been placed in the urine for the express purpose of deceiving the practitioner. The importance of recognising matters of an extraneous origin can scarcely be sufficiently dwelt upon, for until the eye becomes familiar with the characters of these substances, it will be obviously quite impossible to derive such information from a microscopical examination of the urine as will enable the observer to distinguish between those bodies whose presence denotes the existence of certain morbid conditions, and certain matters which have accidentally found access, and, clinically speaking, may therefore be entirely disregarded. Practitioners who use the microscope for investigating the nature of urinary deposits, will derive advantage from subjecting many of the substances referred to separately to microscopical examination, so that when met with in the urine, their nature may be at once recognised. As most of the undermentioned substances are readily obtained and easily subjected to examination, a brief notice of their

character will be sufficient. Your attention should be especially directed to the fact of the frequent occurrence of many of these extraneous substances in urine, and you should particularly notice those characters in which they resemble any insoluble substance derived from the bladder or kidney, or deposited from the urine after it has been standing for some time.

The following are some of the most important of these extraneous matters which have fallen under my own notice:—

Human hair.	Milk.
Cats' hair.	Oily matter.
Blanket hair.	Potato starch.
Worsted.	Wheat starch.
Wool.	Rice starch.
Cotton and flax fibres.	Tea leaves.
Splinters of wood.	Bread crumbs.
Portions of feathers.	Chalk.
Fibres of silk.	Sand.

The microscopical appearances of these substances are given in Plates I, II, and III, figures 1 to 16, of the "*Illustrations of Urine, Urinary Deposits and Calculi.*" You would hardly believe what curious and unexpected substances are sometimes found in the urinary secretion. Some time since, a specimen of urine was sent for examination, which contained several white bodies, about half-an-inch in length, like maggots. Upon microscopical examination, I found that these contained tracheæ, and they ultimately proved to be *larvæ of the blowfly*, although it had been stoutly affirmed that they had been passed by the patient.

A few years ago, Dr. Stewart informed me that a man had brought some urine to him for examination with a thick, brick-red deposit, which was analysed by Mr. Taylor, and proved to consist of sesquioxide of iron. The urine containing this deposit was of specific gravity 1·011; and, upon the addition of ammonia, a brown flocculent precipitate (hydrated sesquioxide of iron) was thrown down. Dr. Stewart tells me, that a considerable quantity of the powder (jeweller's rouge, or sesquioxide of iron) remained suspended in the urine after it had stood for many hours, and that the fluid was still turbid after having been passed through a double filter. The man who brought this urine has been endeavouring for some time to impose upon different hospital physicians.

Hair of various kinds is very frequently found amongst urinary deposits, but, as its microscopical appearance is so well known, it is not necessary to enter into a description of the characters by which it may be distinguished. The varieties of hair most commonly found are human hair, blanket hair, and cat's hair. Not unfrequently portions of coloured worsted will be met with: but the colour alone will often remove any doubts with reference to the nature of the substance. Portions of human hair are sometimes liable to be mistaken for transparent casts of the uriniferous tubes, which are quite destitute of epithelium or granular matter, and which present throughout a homogeneous appearance. The central canal, with the medullary cells within it, in many cases will be sufficient to distinguish the hair from every other substance likely to be mistaken for it; but sometimes this cannot be clearly made out, and the marks on the surface may be indistinct; when attention must be directed to its refracting power, well defined smooth outline, and also to the sharply truncated or fibrous ends, or to its dilated club-shaped extremity in the case of the hair bulb. In the latter points, small portions of hair will be found to differ from the cast, for this latter does not refract so strongly; the lines on each side are delicate but well defined, and the ends are seldom broken so abruptly as in the case of the hair. Cat's hair can scarcely be mistaken for any urinary deposit with which I am acquainted, and its transverse markings will serve at once to distinguish it with certainty. (*Illustrations*, Pl. I, figs. 1, 2, 3.)

Cotton and flax fibres are very often found in urine. When broken off in very short pieces, they may be mistaken for casts; but the flattened bands of the former, and the somewhat striated fibres of the latter, will generally be found sufficiently characteristic. (*Illustrations*, Pl. III, fig. 16; Pl. I, fig. 4.)

Portions of feathers are often detected in urinary deposits upon microscopical examination, and are derived, no doubt, from the bed or pillow. The branched character of the fragments will always enable the observer to recognise them with certainty. (*Illustrations*, Pl. III, fig. 14.)

Pieces of silk are not unfrequently present, but these can scarcely be mistaken for any substance derived from the kidney. Their smooth glistening appearance and small diameter at once distinguish them from small portions of urinary casts, and their clear outline and regular size from shreds of mucus, etc.

Fibres of Deal from the Floor. Of all the extraneous matters likely to be met with in urine most calculated to deceive the eye of the observer, none are more puzzling than the short pieces of single fibres of deal. In hospitals, where the floor is uncovered, and frequently swept, portions of the fibres of the wood are detached, and being light, very readily find their way into any vessel which may be near. In fact, these fibres enter largely into the composition of the dust which is swept up. I was familiar with the appearance of these bodies for a long time before I ascertained their nature; for, although the peculiar character of coniferous wood is sufficiently well marked, when only very small portions are present, and in a situation in which they would scarcely be expected to be met with, their nature may not be so easily made out. Often only two or three pores may be seen, and not unfrequently these are less regular than usual, in which case they may be easily mistaken for a small portion of a cast with two or three cells of epithelium contained within it. I have very frequently met with these fibres amongst the deposit of various specimens of urine which have been obtained from private as well as from hospital patients. (*Illustrations*, Pl. III, fig. 15.)

Starch-granules are very commonly found in urinary deposits, and indeed in all matters subjected to microscopical examination; usually their presence is accidental, but large quantities of starch have often been added for purposes of deception. Their true nature may be discovered, either by their becoming converted into a jelly-like mass on being boiled with a little water in a test-tube, by their behaviour upon the addition of free iodine, or by their well defined microscopical characters. The three kinds of starch most likely to be met with in urine are potatoe starch, wheat starch, or rice starch. They are readily distinguished by microscopical examination. Small portions of potatoe, or pieces of the cellular network in which the starch globules are contained, have been occasionally met with. Under the head of starch may also be included bread-crumbs, which are very commonly present in urine, and have a very peculiar appearance, which may be so easily observed that a description would appear superfluous. Many of the starch-globules will be found cracked in places, but their general characters are not otherwise much altered. (*Illustrations*, Pl. II, figs. 6, 7, 8, 9, 10, 11.)

Portions of tea-leaves are occasionally found in urine. The beautiful structure of the cellular portions, and the presence of minute spiral vessels, distinguish this from every other deposit of extraneous origin. A small piece of a macerated tea-leaf will be found to form a most beautiful microscopic object. (*Illustrations*, Pl. I, fig. 5.)

Milk and certain colouring matters are sometimes purposely added to urine; and it is often difficult to make out whether they have been added with the intention of deceiving us, especially as some colouring matters, such as logwood, Indigo, or Prussian blue (?), when taken into the stomach may be absorbed by the vessels, and eliminated from the system in the urine. A form of Indigo, there can be no doubt, is actually generated in the system. Urine to which milk has been added can be easily distinguished from the so-called chylous or milky urine by its microscopical characters. The presence of small oil-globules, with a well defined dark outline, can always be detected in milk by the aid of the microscope, while in chylous urine nothing but a great number of very minute and scarcely visible granules, composed of fatty matter, can be made out. (*Illustrations*, Pl. III, fig. 13.) The observer should also be familiar with the appearance of oil-globules under the microscope, fig. 12.

Sputum: Epithelium from the Mouth: Vomit. It must be remembered, too, that epithelium from the mouth is often found in urine. All the cells met with in sputum are occasionally found, and a vast number of different substances, which are rejected by vomiting, are from time to time detected. The observer must not be surprised at finding now and then some well defined elementary fibres of striped muscle. It is most difficult to prevent these different substances from being mixed with the urine. They often cause the microscopist great trouble—and especially at first, before the eye has become quite familiar with the appearances, they are likely to give rise to the greatest confusion in descriptions of microscopical appearances. For the microscopical characters of the substances present in sputum and vomit, I must refer you to the woodcuts in *The Microscope in its application to Practical Medicine*, and the plates in the third part of *Illustrations of the Use of the Microscope in Clinical Medicine*: When we next meet, I propose to commence the description of *urinary deposits*, and shall in the first place allude to the characters of insoluble substances floating upon the surface or diffused through the

urine. I shall have to speak of those interesting cases of chylous urine which occasionally come under our notice, and shall advert to the different conditions under which fatty matter occurs in human urine.

Original Communications.

SCROFULOUS DISEASES OF THE EXTERNAL LYMPHATIC GLANDS:

THEIR NATURE, VARIETY, AND TREATMENT.

By P. C. Price, Esq., Surgeon to the Great Northern Hospital; the Metropolitan Infirmary for Scrofulous Children at Margate; etc.

III.—Tuberculous Disease of the External Lymphatic Glands.

In the foregoing chapters have been considered two forms of glandular affections; one, the result of more or less subdued inflammation, termed by the French surgeons, *engorgements;* the other, the effect of a particular chronic increase or hypertrophy of the true parenchymatous glandular tissue. Both these conditions may obtain in all kinds of constitutions; but their occurrence in truly scrofulous individuals is marked by special phenomena indicative of a peculiar diathesis, which generally allow the surgeon to distinguish not only the nature, but oftentimes the cause and results of the diseased action.

So comparatively distinct is the line that can in general be drawn between various glandular affections, that little or no difficulty is encountered in describing under a separate heading a most frequent and destructive form of disease, depending on a true tuberculous manifestation. Hitherto—at least, in England—but slight practical distinction has been drawn between the different forms of glandular affections occurring in scrofulous subjects, so that many really benign conditions of the lymphatic system have oftentimes been indiscriminately, if not ignorantly, spoken of as truly tuberculous. Lebert was the first surgeon of eminence who attempted to define with any precision scrofulous and tuberculous diseases; and so apparent are many of his observations, that I have willingly acceded to some of his views and explanations. I have long ceased to regard every condition of idiopathically enlarged glands in decidedly scrofulous subjects as the result of tuberculous complication; for it will be remembered that in preceding chapters a considerable proportion of glandular swellings, even in highly scrofulous constitutions, were shown to be entirely independent of production by tubercle.

Tuberculous disease of the lymphatic glands may occur at almost any age. I have seen those externally seated involved at a very early period of life; while Oehler, Cruikshank, and others, have recorded instances of morbid states of the mesentery in the fœtus greatly resembling ordinary tubercle.

It is not, however, till after the second year that tuberculous diseases generally manifest themselves, when the mortality arising therefrom is often truly appalling. At the Metropolitan Infirmary for Scrofulous Children at Margate, patients between the ages of three and sixteen years only are admitted, so that beyond the latter age, I am possessed of no very extended means of arriving even at an average appreciation of the number of deaths from tuberculous affections. M. Guersant, formerly of the Hôpital des Enfants Malades in Paris, has stated that in scrofulous children between these two ages tuberculous disease has been found in one or more parts of the body in at least two-thirds of the number of patients who have died in the institution. This proportion is certainly much in advance of any I can offer; for the deaths from various forms of scrofula at Margate among children are comparatively few, when compared with the high rate of mortality occurring in the crowded hospitals and unions of large cities.

Various statistics have been offered as to the frequency of tuberculous disease of the external glands in scrofulous children. Papavoine states that in the bodies of fifty scrofulous children which he examined, tubercle was found on twenty-six occasions invading to a greater or less extent the cervical ganglia. Louis says that in the bodies of scrofulous subjects over the age of fifteen years, the cervical glands were affected with tubercle in one-tenth of the cases which he examined.

My own conclusions allow me to verify the results of M. Papavoine; for I think it may be asserted, as a rule, that the development of tubercle in the lymphatic glands is a very early and frequent manifestation in the young scrofulous subject, especially when subjected to various depressing influences. Although the appearance of tubercle in the lymphatic system is by no means infrequent after the age of two to eighteen years, still it appears from my own statistics that it most usually occurs between the ages of six or eight years and twelve or fourteen years. It may invade the lymphatic ganglia as a specific and solitary affection, or as a secondary consequential development coexistent with similar manifestations in other parts of the body.

In young children it, perhaps, more often occurs without any previous appreciable association, except a well marked scrofulous constitution. On the other hand, although tubercle may not only be suspected but detected in other localities, yet the destructive form that it assumes when deposited in the glands is oftentimes the most formidable manifestation which has to be encountered. In youth such developments are more frequently associated with similar ones, especially in one or more of the internal organs of the body. Louis mentions that tuberculous disease seldom or never occurs in the external glands after the age of fifteen years without appearing in the lungs. This well known law, as it has been called by many English writers, is, however, I am convinced, one that is untenable without numerous exceptions. I have had considerable opportunities of observing cases which have proved the incorrectness of this deduction, and although I do not mean to avow that the association of glandular and pulmonary tuberculosis never coexists after the age of fifteen, still I cannot admit, so far as my own experience goes, that it is a compulsory and infallible, at least to all physical signs, combination. Cases have lately particularly impressed this fact on my mind, and, I believe, there are many whose opportunities of observation are much greater than my own who have arrived at the same conclusion.

On the other hand, it by no means follows that, because the lungs are seriously involved in tuberculous disease, the same morbid condition should be extended to the lymphatic ganglia. I have made particular inquiries from sources of large experience regarding this point, and I find that it is comparatively rare to see in the adult a tuberculous condition of the external lymphatic glands following the development of phthisis pulmonalis. My friends, Drs. Pollock, Cockle, and Webb, whose testimony is much to be valued, inform me that my deductions are in harmony with their own; while from the very latest work on *Diseases of the Lungs* by a well known and distinguished authority (Dr. Walshe, 3rd ed., 1860), I peruse the following observations, which tend to confirm my own convictions. "The external lymphatic system," writes this physician, "on the whole, rarely undergoes tuberculisation in the phthisical adult. An antagonism, not absolute but tolerably well marked, seems to exist between the external and internal tuberculising processes. In corroboration of this, I have known the cervical and axillary glands greatly enlarged in phthisical people rapidly fall to the natural size without suppuration or symptom of any kind, while pulmonary tuberculisation rapidly advanced."

Although the two forms of tuberculous manifestation—pulmonary and glandular—are not of frequent occurrence, still they do sometimes appear in concert. One of the most distressing cases of this description which has come under my notice is the following.

I was asked lately by my brother, Dr. William Price of Margate, to see a patient, a girl, about nineteen years of age, who for years had been in a delicate state of health, and a sufferer from glandular swellings of the neck. At the time I saw the patient she was in the last stage of consumption, the right lung was filled with purulent matter, which was constantly coughed up. In addition, the cervical glands on both sides were so enlarged as completely to mask the contour of the neck and shoulders. There was no doubt of their tuberculous character, for the pain, acute nature of the suffering, and the contents of some of the glands which had been opened, fully indicated the true type of the affection.

Under the age of fifteen, however, pulmonary phthisis frequently occurs in concert, or soon manifests itself, after recognition of glandular tuberculosis. Indeed, many of the deaths which have occurred at the Children's Hospital at Margate during the past six or eight years, have been mainly

attributable to pulmonary complications, added to pre- or co-existing mischief of one or other portion of the lymphatic glandular apparatus.

Of all the lymphatic glands which are situated on or near the surface of the body, those occupying the region of the neck are most frequently affected with tubercle. Such a marked tendency has been explained in different ways, and various ingenious theories have been broached to prove what, even at first consideration, seems so apparent. We will not, however, stay to consider the positively asserted views of Henning, and the clearly expressed opinions of Cullen, Russell, Thompson, White, and numerous other intelligent writers on scrofula, but remain content with receiving with credence the fact that is every day corroborated.

Out of 113 instances of suppurating absorbent glands, apparently tuberculous, which I have tabulated, in 82 the glands situated in the neck were solely affected, while in the remaining 31 cases the glands of the axilla and groin were the seat of mischief, although, in the majority of examples, the cervical ganglia were likewise implicated. In 175 cases of tuberculous disease of the external glands given by Lebert, 108 are reported as being strictly confined to the cervical ganglia, while in almost all the remaining 67 instances, which included disease in other glands, those of the neck were likewise affected. Tuberculous disease of the cervical glands is seldom in itself a fatal malady. It is astonishing to see how many grown-up individuals bear evidence of once extensive tuberculous mischief of the lymphatic ganglia. If we analyse carefully and discriminately the history of a large number of cases in which a tuberculous state of the glands externally situated had been the most severe complication, it will be found that comparatively slight mortality resulted therefrom, though very delicate and strongly marked scrofulous children were the sufferers. It is the tendency of Nature to restore the damage that has been committed by morbid processes when elimination of the local mischief has taken place, and hence it is that reparation and cicatrisation frequently so rapidly ensue when diseased action has ceased.

Great inconvenience and positive danger are, however, more or less frequent results of a tuberculous condition of the cervical ganglia, owing not only to the impediment they may occasion to the functions of deglutition, respiration, and circulation, but to the debilitating condition to which they expose the entire system. Andral has recorded an instance in which death resulted from the immediate effect of the presence of large masses of tuberculous glands in close relation with the windpipe, and out of the number of cases I have given, one child perished from the exhaustion and debility occasioned by the almost complete inclusion of the cervical glands in tubercular phthisis.

The lymphatic glands situated in various parts of the body, may be more intimately considered with regard to their susceptibility to tuberculous conditions.

Tuberculous Disease of the Cervical Glands.

It has already been observed that the glands situated in the region of the neck and face are more frequently the subjects of tuberculous disease than those occupying other positions. The more superficially seated of the cervical ganglia seem to exhibit a greater tendency to diseased action than those more deeply placed, as was lately mentioned. The glands of the right and left side appear equally liable to take on tuberculous conditions; and it is seldom, in advanced stages of disease, that one side only is involved. Tuberculous deposits may invade only a single gland; but it is much more common to find a cluster, or even an entire chain, involved. Should one gland be alone included at an early period of the disease, it is more than probable that those in close relation will show a marked tendency, if not positive sympathy, and at length absolute diseased action. As already mentioned when speaking of the various kinds of chronic hypertrophies, tuberculous depositions may ensue in glands which have undergone enlargement both by inflammatory changes and non-vascular excitement. More frequently, however, the disease commences as a specific affection, and runs its course independently of other abnormal conditions. It may be that the appreciable tuberculous implication of a gland is a tedious process, or one of great rapidity. I have frequently watched cases in which glands known to be affected with tubercle have existed in a certain condition for years without showing any decided signs of extensive mischief; while, on the other hand, I have recorded instances in which suppuration or phthisis of cervical glands has run its course with astonishing rapidity. The size to which a single gland, cluster, or chain of ganglia, may attain, is variable. It may be that the enlargement before softening and suppuration occur is but trivial; at other times, it is very considerable; and I have seen many instances in which the gland-swellings arrived at great dimensions before any actual evidence existed of ulcerative and suppurative action; while not unfrequently I have found the increase in size but trivial when destruction had commenced. There is no direct explanation, as far as I am aware, that can be offered as to the reason why such variations should exist, beyond the known fact that age, constitutional and extraneous causes, greatly modify all morbid actions. It may, however, be observed that I have much more frequently seen the cervical glands of sanguine individuals, whose hair in colour is from light or sandy to chesnut, red, and auburn, whose eyes are shades of blue or sickly green, and whose personal aspect betrays the tone and character of delicateness and weakness, obtain to greater dimensions than glands similarly affected in more phlegmatic and lymphatic temperaments.

Tuberculous deposition in the cervical glands is very commonly, especially in truly scrofulous children, associated with various diseased states of neighbouring parts which partake of a tuberculous or somewhat analogous condition; such, for instance, as affections of the scalp, lupoid eruptions and ulcerations, otorrhœa, ozæna, ophthalmia, etc. Not unfrequently more distant parts of the body, such as the bones and joints of the extremities, are accompaniments of the glandular mischief; while very commonly the portions of the lymphatic system situated within the chest and abdomen, as will be hereafter considered, are likewise included.

One of the worst cases of cervical glandular tuberculosis, associated with disease of the bones and joints, that I have seen, is now in the Children's Hospital at Margate. Many of the ganglia on both sides of the neck are in a suppurative state; while the right knee-joint, tibia, and ankle, are in a precarious condition. It is instructive to mark that various phases of tuberculous disease of the cervical glands, when not accompanied with any very distinctive signs of similar disease in glands situated within the abdomen or chest, are not unfrequently kept up and aggravated by some similar irritating form of mischief situated in bones or joints. With this fact I have long been conversant, and could mention numerous instances in which healing and cicatrisation of glands have ensued on the removal of the coexisting disease. In one case in which I excised the knee-joint, this feature was well shown; for, while the child for years had been subject to glandular disease, he is now perfectly free.

With the deposition of tuberculous matter in cervical glands, there may result either slight constitutional shock or very grave disturbance. But it is not in general that very decided symptoms of sympathetic irritation manifest themselves till softening and inflammatory conditions obtain in the glandular parts. It is not then unusual to see the system much harassed with pain, restlessness, and hectic fever. In proportion to the diathesis of the patient, the amount of local implication, and state of the constitution, is the amount of general disturbance that ensues.

The occurrence of suppuration in tuberculous glands, associated with a weak and undermined constitution, is always to be looked upon as an unfavourable condition, although it is by such means that cure is oftentimes at length obtained.

The various states into which tubercle is apt to convert lymphatic glands will be more fully noticed when considering the pathological changes which commonly ensue. Before, however, closing this brief review of some of the principal features connected with a tuberculous state of the cervical glands, it may be well to remark that the few lymphatic glands associated with the head and face are likewise the subjects of tuberculous manifestations. The solitary gland placed in front of the parotid is very commonly affected; and I name this particularly, as I have known it in a diseased condition, such as we are now considering, mistaken for a distinct tumour.

Tuberculous Disease of the Axillary Glands.

Next in frequency to the cervical ganglia, those occupying the region of the armpit exhibit a tendency to be involved in tuberculous inflammations. But these glands are much less commonly affected than is generally imagined; and, although they are more often involved when the tuberculous degeneration is well marked in the cervical and other portions of the lymphatic system, still it is somewhat unusual to find them included when those of the neck remain free. This remark will, perhaps, be of greater moment by quoting statistical results, as

offered by Lebert. This distinguished author, in one hundred and fifty-eight cases of tuberculous glands which he collected, states that in eight only were the axillary glands alone affected. Louis, moreover, mentions that in eighty cases of tuberculous disease, he found the axillary glands involved on only one occasion. When these glands are included, it appears from my own statistics that a definite exciting cause is often necessary to predispose them to assume a tuberculous condition. From position, the axilla is but slightly exposed to vicissitudes of temperature, but to strains and injuries it is more susceptible. Hence it is that, in seeking for statistics of tuberculous disease of the glands of this region, it is usual to inquire, when meeting with cases, whether injury has been sustained. This necessity is well illustrated in the case of a scrofulous looking man who was some time since under my care at the Great Northern Hospital, who, when one day at work, sprained his right arm. Irritation of the axillary glands followed, and, in the course of a few weeks, three or four of the glands had assumed all the appearance of tuberculous induration. In the course of time, these swellings softened, and eventually discharged true tuberculous pus, mingled with shreds of unhealthy looking scrofulous lymph. Cicatrisation followed; but three of the glands were completely destroyed.

The size to which tuberculous enlargements of these glands may obtain is variable, and dependent on such circumstances as already mentioned when speaking of like disease of the cervical ganglia. The loose way in which they are associated, and the redundancy of cellular tissue in which they lie, enable considerable increase in size to be attained before any very great pain is experienced; but, as a rule, the extent to which enlargement arrives is not great ere resolution or destruction ensues.

It has been stated by a well known writer and pathologist, that "tubercle and cancer are incompatible—the one excludes the others" (*A Course of Lectures on General Pathology*, by John Simon, F.R.S.) I am induced to give an example in which tubercle involved the lymphatic glands of the right axilla, between eighteen months and two years after removal of the right breast, which was affected with cancer, because, until lately, the above stated doctrine has been generally looked upon as infallible.

The patient in whom this somewhat unusual condition occurred was a lady, a patient of Mr. Fergusson, whose cancerous breast I assisted this distinguished surgeon to remove more than six years since. The axillary glands at this time were to all appearance intact; but, about eighteen months or two years afterwards, they had attained a large size; and, as it was feared that they were in a cancerous condition, an operation was resorted to. On placing portions of the removed parts under the microscope, a true tuberculous degeneration was detected. Cases of a somewhat similar character have lately been published; and one of great interest was recorded a short time since in the *Medical Times and Gazette* by my friend and former colleague, Dr. Coote.

Tuberculous Disease of the Inguinal Glands.

It is comparatively seldom that these glands are implicated with tubercle, except under certain conditions. I have seen but few instances in which tuberculosis occurred as a solitary affection, or unconnected with any similar manifestation in other parts. The following is an instance in which, however, one or more of the glands of the right groin were involved with tubercle after a severe attack of low fever. The patient was a gentleman, about twenty years of age, who consulted me last summer regarding a tumour in the right groin. It had made its appearance shortly after convalescence from a protracted low fever. It passed through the various destructive changes of tuberculous inflammation, etc.; and cure was only effected by healing up the sinuses which had been formed between the cavity of the glands and the integument. The discharge from the glandular swellings presented all the characteristics of tuberculous matter. This patient exhibited a strong tendency to phthisis.

The comparative infrequency of tuberculosis of these glands is, perhaps, not generally admitted; for abscesses and ulcerations in the neighbourhood of the groin are of common occurrence, and care must be taken that they be not mistaken for true tuberculous destruction commencing in the proper glandular structure. It may be mentioned, as confirmatory of my own views on this point, that neither Louis nor Lebert mention a single instance of tuberculous inguinal glands.

Although the neck, axilla, and groin, are the principal localities in which lymphatic glands are found near the surface of the body, still there are other parts in which they are situated. In relation with the female breast, at the bend of the elbow, on the forearm, in the popliteal space, etc., are scattered a few absorbent glands; but suffice it to say, that their implication with tubercle is comparatively rare, so far as I am aware, except it be those situated in the front of the chest, which are occasionally, in concert with the cervical ganglia, involved.

[*To be continued.*]

A CASE OF SALÄM CONVULSION (ECLAMPSIA NUTANS).

By John Watson, M.D., Southampton.

The patient was A. S. W., aged 3½ years. For several months past, the present attack had been growing upon her; previously to which, she had always been healthy, having had none of the diseases usually occurring in childhood, with the exception of a convulsion fifteen months ago, after a hearty indigestible dinner. The attack first appeared as a simple falling forwards of the head for a moment; was only noticed during a meal-time, and was explained by supposing the child had dropped into a doze. This falling of the head, however, continued gradually to increase in frequency and determinateness; so that at length what was at first uncertain, and thought to be fancied by some of the child's friends, had forced itself painfully upon their attention.

When I first saw her (March 1860), these attacks were very frequent, and the head was drawn down so forcibly as to bruise or cut her chin with the violence with which it struck her basin when she was feeding herself, or the table or other article of furture over which she might chance to be leaning at the time. Without any warning, the eyes became suddenly fixed; the head and neck spasmodically bowed; and at the same instant the arms were thrown upwards, outwards, and a little backwards; the hands dropping whatever they might be holding. This continued for a second or two; and the child resumed whatever she might have been about, as if nothing had occurred. The seizures were most numerous in the morning (when she could not be trusted to feed herself), though they occurred twenty or more times in the day, and probably during sleep also, as she was observed frequently to start in bed. Her forehead, nose, and chin, were marked with bruises; and she requested to be tied to her chair at meal-times. Unlike the cases of salām convulsion I have seen recorded, *the attack ended with a single "salute"*. The child was fairly grown, moderately plump, with clean tongue, moderate appetite, and soft abdomen. All the nutritive functions were apparently well performed; she had never had worms; and no other eccentric cause of the disease could be detected. She was quick and intelligent; the only abnormal symptom being an apparent deficiency of tone in the muscular system. She walked, ran, jumped, and sat *heavily*, without spring or elasticity.

The treatment enjoined was at first hygienic only; fresh air, plenty of exercise, a mild nutritious diet, and cold bathing. But the convulsion continued undiminished either in frequency or force; and she had, in addition, three short, but unquestionably genuine epileptic fits, during this month, all of them coming on in the early morning. In April, I prescribed dilute phosphoric acid with steel; but, after using it for about three weeks without benefit, I exchanged it for full doses of valerianate of zinc, and was gratified by one week's entire absence of attack. However, the attacks returned as vigorously as ever; and the administration of this medicine for five weeks longer having failed to afford relief, I had recourse to the oxide of the same metal, with a similar negative result. Adding cold sea-bathing to the hygiene, I now commenced the regular administration of cod-liver oil, commencing with three drachms, and rapidly increasing the dose to an ounce daily. After taking twelve ounces of the oil, the seizures became less frequent for three or four days, and then altogether left her, though she continued to take the oil for several weeks longer.

She is now quite well—a remarkably intelligent, merry child, and possessing more activity of limb than before her illness.

Remarks. The case is interesting chiefly from its infrequency. I have never seen a similar one; nor have those of my medical friends to whom I have mentioned it. Its happy termination renders it probable that the proximate cause of the peculiar movements described was simply mal-assimilation occurring in a central organ of the nervous system. The non-implication of the intellectual powers would seem to exclude

the brain; while the nature of the attack itself (so distinctly excito-motor), and the defective tone of the lower limbs, point alike to the spinal cord. It also adds another to the many testimonies we have to the power that cod-liver oil exercises over the assimilative functions generally.

OBSERVATIONS ON THE TREATMENT OF ASTHMA.

By T. L. Pridham, Esq., Surgeon, Bideford, North Devon.

[*Continued from p.* 683.]

Case viii. I now proceed to record a case of dyspeptic asthma, in a gentleman, aged 62, who had passed upwards of thirty-five years in India, his occupation being chiefly that of an indigo-planter. He had been afflicted for ten years with the disease, the severity of which had obliged him to leave India and his profitable occupation. He had, in addition to almost constant asthma, frequent attacks of jungle-fever, so that with the combination of these formidable diseases, he was reduced almost to the last extremity before he was put on board ship to return to his native country, to seek, if possible, restoration to health. He landed in England, after a voyage of intense suffering from the effects of asthma.

He had been home about three years when I first saw him, on November 20th, 1857. He was then somewhat improved in health; still at times he suffered severely. He could not at any time lie down in bed; and every morning he expectorated at least a pint of heavy mucous secretion. His pulse was irregular and slow. His tongue was large, covered with fissures, and coated. The lungs were emphysematous in their whole extent. The body was emaciated; the shoulders were raised; the countenance bore marks of long and continued suffering. His appetite was not genuine, though he ate largely, as he remarked, to make up for his daily waste, in consequence of the large amount of expectoration. The bowels were costive; the urine was loaded with lithates. Under these circumstances, I placed him for some days on an alterative and saline aperient plan, under which his secretions improved, his tongue became cleaner, and his general appearance more satisfactory; but the night distress and morning expectoration continued much the same.

On the tenth day, I commenced the sedative plan of treatment by giving three grains of the extract of conium four times a day, just one hour before each meal; that is, at seven A.M, twelve A.M., six P.M., and ten P.M. I, at the same time, ordered an aperient pill, composed of three grains of the watery extract of aloes and one-fourth of a grain of the extract of stramonium, to be taken at night, as often as it might be required; and the bowels to be solicited to act every morning directly after breakfast, by means of an enema of soap and water. With regard to the diet of my patient, I desired that the strictest attention should be paid as to regularity, quality, and quantity: for breakfast, at eight A.M., he was to have a breakfast cup of green tea with a little raw cream, and two ounces of dry stale bread; for dinner, at one P.M., two ounces of fresh mutton or beef without fat or skin, two ounces of dry bread, and three hours after dinner, weak brandy or whiskey and water or toast water *ad libitum;* for supper, at seven, the same diet as at dinner; and at half-past ten P.M., a little weak brandy and water. Air and exercise were enjoined, but not within three hours after eating animal food.

On December 25th, my patient under this treatment was so far relieved that he could recline comfortably in bed; his expectoration was lessened, and his breathing much improved; the bowels were regular, and the urine clear and free from lithates, and he remarked to me that he had not been so free from suffering for years.

On January 1st, he writes: "With the new year appears to have commenced a new era of my life. I sleep all night, and I have now no morning cough; and instead of holding on by the banister to get up stairs, as I was accustomed to do before I commenced your plan of treatment, I can now spring up two stairs at a time; and, to my astonishment, I often find myself either singing or whistling just as I used to some twenty years ago—I think I cannot give you a better description of my present enjoyment of my animal powers and my perfect freedom from oppression, than my relating this one circumstance, which I know you will be pleased to hear."

On March 1st, he writes: "I still go on well. My health is perfectly good; I walk eight or ten miles a day, and do not appear to be the worse for eating six ounces of animal food daily as you directed, in addition to six ounces of bread and rice. I take and enjoy my weak brandy or whiskey and water as usual, occasionally I indulge in a couple of glasses of good old sherry three hours after my dinner. I now take your medicine only three times a day; and, notwithstanding the small amount of food which I now take in comparison to what I have long been in the habit of taking, I have increased in weight since January 1st just seven pounds."

On September 10th, he writes: "I still continue in good health, and take your medicine only twice a day; it appears to have a great influence over me in its soothing effect, and I do not like to discontinue it; I have still added to my weight, although I do not take above one-half the food I used to take."

For more than a year I continued to receive good accounts of my patient. Whenever he had any symptoms of his former disease, he always attributed it to his own imprudence.

Case ix. The next case which I shall relate is that of a gentleman in London, who, on January 15th, 1859, writes to me thus:—

"I have long suffered from that most distressing complaint asthma, which during the winter months unfits me for every thing; in other respects, I am in tolerable health; my age is sixty-seven. I have continual cough and most profuse expectoration of a thin frothy character; and for hours together I breathe as it were through a hookah; I can get no relief, and I can assure you my sufferings are most distressing. I feel the greatest difficulty in drawing my breath in the morning before I get rid of my expectoration by violent fits of coughing; on going up the slightest ascent, I feel the greatest difficulty. Having given you these particulars, will you kindly tell me if you think you can give me any relief, so that I may be able to attend with any degree of comfort to my calling, which has been for forty years of a most exciting nature, as all men know who have to do with the Stock Exchange. I am prepared to make any sacrifice with a tolerable prospect of getting relief."

Some few days afterwards, he visited me; and, in addition to the previous history of his case which he had given, I learned that he had been afflicted for many years with asthma, as those who frequented the Royal Exchange could testify, for his distress of breathing and anxious countenance were the theme of many whilst transacting business or in conversation with them. Still his natural energy had carried him through his daily avocations up to the present time, but with increasing years he felt that life was becoming daily more insupportable. His appearance when I first saw him bore the marks of a confirmed asthmatic. He was tall with a large frame, bent forward not so much from age as from the position which he was obliged to assume whilst on his feet and frequently during the greater part of the night; his shoulders were greatly raised; his eyes protruded considerably, and the conjunctivæ were much suffused; the tongue was thickly coated and chapped; the breathing was oppressed and painful; expectoration was considerable and frothy; the chest was emphysematous nearly through its whole extent; the bowels were irregular and costive; the urine was loaded with lithates; pulse 96; the heart was normal, but feeble in its action; his appetite was precarious, and he had much flatulent distension of the stomach and bowels. He usually ate largely of soups, made dishes, and pastry, in addition to more solid food, and drank his beer and wine liberally. His distress, he said, was always the most after a full meal, and his nights were wretched. It was evident that, in addition to his usual dyspeptic asthma, he was now suffering from bronchitis also, from exposure to a draught during his journey. I therefore commenced giving salines with nitrate of potass, and counterirritants; knowing full well by experience that it is useless to place a dyspetic asthmatic patient under specific treatment until all *inflammatory* action of the chest has subsided, which having been accomplished, I then placed him on the sedative and strict dietary system, allowing him, in addition to six ounces of bread daily, four ounces of animal food without fat or skin. He was allowed green tea, coffee, and weak brandy and water *ad libitum*, provided the liquids taken did not interfere with the digestion of the animal food. His meals were ordered to be given with the greatest regularity, at the hours of eight A.M., one P.M., and seven P.M.; the bowels to be regulated by means of four grains of the compound aloetic pill, and a simple enema after breakfast if it should be required. In addition, four grains of the extract of conium were ordered to be taken four times a day, at the hours of seven A.M., twelve noon, five P.M., and ten P.M.

Here I may remark that the greatest punctuality is required as regards taking food as well as medicine. The bowels should also be acted on immediately after breakfast, either naturally or by means of an enema; in fact, success greatly depends on the regularity with which all the functions are performed. Care should be taken also to rest the body and mind for an hour after eating animal food.

All these regulations having been fully carried out by my patient, he writes on February 14th from London, just a fortnight after his return home: "I continue to progress satisfactorily, and am quite relieved of inconvenience. When in bed, my cough seems to be now approaching to what I generally experience during the summer season."

On April 4th, he wrote: "I am well enough to be off to Paris to-morrow. I assure you, I continue to experience the most satisfactory results from your treatment. By your permission, I take an egg with my breakfast, and a glass or two of sherry two hours after my dinner, and I find myself all the better for it; in other respects, I do not deviate from your prescribed treatment. I now find no walk too long for me, and except a little cough in the morning, I have nothing to complain of."

On March 17th, my patient writes: "I have very great cause to be thankful for my visit to Bideford. I am nearly free from my distressing cough with which I have been so painfully afflicted for so many years, and particularly at this season. I still persevere in following most minutely all your instructions; I greatly enjoy my glass of porter which you have allowed me at eleven o'clock, in addition to my sherry and water at four."

On April 15th, he wrote: "From the severity of the weather, I have taken a severe cold; however, my cough is nothing when compared with the sufferings I formerly experienced at this season of the year; I do not get any fits of asthma now. I find it absolutely necessary to keep my bowels as regular as possible; as, if they do not act regularly, I am sure to be reminded of it. I am greatly improved in condition, and am equal to almost any amount of fatigue."

Shortly after my last communication, I had occasion to visit London, and found my patient in the enjoyment of comparative health and comfort. I strongly advised him to give up his anxious and exciting mode of life, and seek amusement, if it were possible, in country life, which he promised me to do. Since this time, I have not heard from him. I think that in this case it must be admitted that success attended the treatment adopted, inasmuch as a life of constant suffering became one of comparative ease and enjoyment.

Case x. The next case which I shall record is that of a celebrated engineer, residing near London, which will, I think, be read with interest. I will commence by giving his own account of his disease to me, in a letter dated July 2nd, 1856.

"Having heard that you have been successful in the treatment of asthma, I take the liberty of writing to inquire whether you think you could prescribe for the paroxysms to which I am subject, without personal attendance. I am forty-nine years of age, and have been subject to asthma for the last ten years. It attacks me with the greatest violence between the months of May and January, when I sometimes have an attack as often as once a week; the dry parts of January seem to diminish the tendency to the complaint; and until April or May, the attacks are less frequent. When an attack is about to come on, I generally feel a little rattling in my throat on going to bed, and am awoke up in the middle of the night or early in the morning and am unable to lie down any longer. The breathing gives rise to the most painful effects; the air-cells seem to be stopped up, and it is only by a convulsive, or spasmodic effort, that I succeed in drawing breath, and each time I do so, it appears as though the chest were going to burst. The muscles of the neck and those over the stomach are violently acted upon; and the paroxysm is sometimes so violent that I am unable to speak. It usually lasts about thirty-six hours, and then goes off by degrees whilst I bring off a copious expectoration. The London physicians whom I have consulted have given me little hope of combating these dreadful paroxysms; but have suggested various things, as solution of iron, hydrocyanic acid, smoking stramonium, or henbane seeds, taking stramonium internally. All these remedies have been without success. I was once under a course of alkaline solution, principally carbonate of potash and iodide of potassium, but it had no effect. I have given up the hope as well as the idea of going through any lengthened treatment. What I am anxious to discover is, some means of alleviating the paroxysms to which I am subject; and it is in the hope that you may be able to prescribe something that I have taken the liberty of detailing my case to you. I forgot to say that, as soon as an attack is over, I am perfectly well and capable, to a certain extent, of bearing fatigue. I am not very particular in my diet, and I partake of what is brought to table."

In this case it is evident that the exciting cause of the disease had been quite lost sight of, and consequently the remedies employed had failed to procure relief as the sequel will fully prove. I will here insert my answer to the above communication:—"July 5th, 1856. In reply to your note which I received this morning, I beg to say, if you are desirous to try my plan of treatment for asthma, and will procure from an experienced medical practitioner, well versed in diseases of the chest, a certificate that you are free from any organic disease of the heart or lungs and have no effusion within the cavity of the chest, I will forward to you some written regulations as to the course I wish you to pursue as to diet, together with some medicine to be taken on an approach of an attack, which I feel will materially relieve your sufferings. It would be more satisfactory to myself to see you, as I could then speak more decidedly as to the probability of your recovery, which depends more on the state of the vital organs, than on the disease of pure dyspeptic asthma. I do not wish you to believe that medical treatment would not materially benefit under any circumstances; but my opinion would be guided in proportion to the soundness of the heart and lungs, which are occasionally implicated in cases of long standing."

In answer to my letter, I was informed that several experienced physicians had examined his lungs and heart with great care, and that all had given their opinion that no actual disease existed in either. His physician, who visited him the day before he wrote, told him that the cough to which he had been subject from the age of sixteen indicated that his lungs were not quite what they ought to be, though there could be no serious affection about them, or he would not be in existence at present.

With these particulars of the case, I did not hesitate at once to prescribe the sedative plan of treatment, with the strict dietary system, which it was evident from the following note, dated July 14th, he was rather fearful to commence; for he writes:—

"Before commencing your plan, I think it right to observe that, as I am of a spare habit, it has always been considered that I require strengthening and nourishing diet, rather than a lowering one. I give you these particulars, which, by the bye, I ought to have furnished you with before, in order to put you more completely in possession of my bodily state. I shall, therefore, delay commencing your regimen until I hear from you again. My pulse usually is about 66."

As this information made no alteration in my mind, I requested he would at once commence the prescribed plan of treatment; and on August 23rd he writes as follows:—"I have had no second attack since I began your plan, which is a thing not absolutely without example, but still nearly unprecedented at this season of the year. Some little oppression I have had several times, but not enough to prevent my walking to town; and no attack has lasted above two hours, which is without precedent. Although the time is too short to form a judgment, appearances are in favour of the supposition that your regimen has done me a great deal of good, and is the best mode of combating my terrible enemy."

About a fortnight after the date of this letter, I had occasion to go to town, and then found that my patient had progressed most satisfactorily. His appetite was greatly improved, his tongue clean; the distension of the stomach was gone; the strength was improved; and he had had no actual return of his complaint. I increased his amount of food, and allowed him a little sherry and water.

This case appeared so interesting and satisfactory, that I requested he would give me its full history, which he was good enough to undertake, and writes to me as follows. The letter is dated from Broad Sanctuary, Westminster, Sept. 6th, 1856.

"At your request, I write to you all the particulars of my case, which you have so successfully treated; and I have thought it might be as well to set them forth as fully as possible, though I may possibly become tedious by repeating a great deal of what I have already written to you.

"At the age of fifteen, I was much troubled with cough and wheezing in my chest, and was compelled to keep the house whenever the weather was unpropitious. By dint of care, I was perfectly cured; and from that day to this I have never been subject to any material affection of the chest that I remember. When I arrived at the age of twenty-three, in 1830, I went to Algiers, and spent seventeen years in that or in other towns of

the French possessions, with the exception of two very short visits to England. During my stay in Africa, my health was generally good; and, like most people of spare habit, I found the hot climate agree with me. Nevertheless, some few times I was attacked with short breathing, not exactly like the paroxysms of asthma which I have been subject to since, but still sufficient to produce much inconvenience. I found that the application of a mustard bath, or that failing, the application of leeches, was sufficient to calm the oppression; and the cases occurred so seldom, that I thought nothing of them. About a year after my return to England (1847), I began to be attacked with paroxysms of asthma. I generally had some warning over night in the shape of some huskiness in the throat, and was wakened in the middle of the night, or very early in the morning, by an oppression which rendered it impossible for me to lie down. In a short time, the paroxysms gained strength, and I breathed as it were by jerks, each aspiration being accompanied by spasmodic effort that seemed as though it would burst open my chest; and the contraction of the muscles in my neck and below the ribs in front was very great, and at the same time most painful. During the attack, I was continually in want of passing water, and the urine was extremely pale. The attacks were not of equal violence at all times, though frequently they were so severe as to prevent me dressing or undressing without aid, and to incapacitate me me from all movement; and I have frequently passed the whole of the day in my armchair, gasping for breath. The duration was almost always the same. On the second night, I went to bed with my breath much affected, but generally went to sleep; and the next morning the paroxysm would leave me about ten or eleven o'clock, having lasted me thirty or thirty-six hours, with more or less intensity. I had generally an attack once a week to once a fortnight. The paroxysms have continued up to the time at which I consulted you, though with some little modification, inasmuch as, for the last year or two, I have generally been attacked during the night. I have not been so *invariably*, and there have been times at which the oppression has lasted as long as two days, though in these cases the severity has been diminished as the hours went on. During the first years, I invariably expectorated a great deal when the paroxysm left me; and as soon as it was over, and until a fresh attack occurred, I was instantly and entirely free from all difficulty of breathing. Latterly, there has been cough and less expectoration after an attack; and its disappearance has not been quite so sudden, but the freedom of breathing has returned by degrees. I have been treated in various ways for six months together. I took bicarbonate of potash and iodide of potassium, of which the object was, I believe, to bring the mucous membrane into a sound state.

"I have smoked stramonium, and taken it internally, without any relief; and henbane-seeds; inhaled chloroform, ether, and the fumes of blotting-paper which had been impregnated with nitrate of potash; but nothing has ever been of the slightest service. I began following the system you recommended me on July 27th, and from that day to this I have not had a single violent paroxysm. My breath has certainly been affected more than once, but not sufficiently to prevent my walking with some little difficulty a distance of three or four miles; and the oppression, such as it was, has left me in the course of two or three hours, which is a thing perfectly unprecedented. The lapse of time yet has not been sufficient to enable me to pronounce with certainty; but as no such interval, at this season of the year, has, to my recollection, occurred within the last eight years without a paroxysm, I cannot help feeling the strongest hopes that your treatment, if it has not eradicated the disease, has at all events most materially mitigated it. Should these particulars be wanting in any point, I will gladly supply you with any further details. I am now only taking your medicine at night."

I have given this letter at length, as evidence of a faithful record of one on whom disease and suffering had caused an indelible impression on his memory, which lapse of years could not efface. I continued to hear from my patient occasionally for some months, giving equally satisfactory accounts of himself, since which I have received no report, which is, I hope, a proof that he wants neither advice nor assistance from me.

Case xi. I shall conclude this paper by giving a short history of a case of dyspeptic asthma in a boy, the son of a clergyman who was himself a martyr to bronchitic asthma, of which he died at middle age. In the month of August 1856, the lad came under my medical care, he being frequently liable to severe attacks of asthma, almost always traceable to his eating indigestible food, such as pastry, new bread, sweets, and trash of various kinds. When I first saw him, he was suffering severely. Having ascertained what was the exciting cause, after giving an emetic and clearing out the alimentary canal, I placed him at once on sedative and strict dietary plan, giving him two grains of the extract of henbane three times a day. He took his medicine for about three weeks, during which time he had no symptoms of a return; and I understand now that, from a more regular system of living, with regular hours, he keeps tolerably free from an attack. If he indulges, he is fully aware of the penalty he has to pay.

[*To be continued.*]

Reviews and Notices.

Diseases of the Heart; their Pathology, Diagnosis, and Treatment. By W. O. Markham, M.D., Fellow of the Royal College of Physicians; Physician to St. Mary's Hospital. 2nd Ed. Pp. 276. London: Churchill. 1860.

We do not exaggerate in saying that there is scarcely any subject in the range of clinical medicine which, during the recent age of progress, has received more valuable contributions to its advancement and better understanding, than that branch of our science which comprehends the nature and treatment of heart-disease. This fact we are especially bound to remember in criticising a new publication on cardiac pathology.

The pioneers who explored the character and the causes of the sounds of the heart, have enabled us to map out, with an accuracy which a few years ago would have seemed a miraculous intuition, the seat of disease as indicated by the modifications of these sounds. The immediate followers of these early explorers too hastily realised these phenomena, and gave them a significant influence which more mature observation has greatly modified. It is one thing to hear a cardiac murmur, to fix its exact seat, and to indicate the probable morbid condition on which it depends; it is a very different thing to learn what it really means, and to tell what will come after it. This is one of the great acquisitions, as Dr. Markham shows us, of recent clinical experience. Closely allied in study, as regards results, with these valvular lesions, and equally important, is the class of functional disorders of the heart; those associated, for example, with diseases of the liver or of the kidneys. We know, for instance, how greatly the functions of the circulation are affected in cases of albuminuria—to such an extent, indeed, as to constitute the well marked phenomena called "renal asthma": still, this knowledge is less general than it should be; for, in a standard work on heart-disease, published so lately as 1854, the subject is not even named. We are glad to observe this and like subjects fully discussed by our author.

It is only within the last ten years that we have obtained an insight into one of the most serious lesions to which the heart is liable; viz., fatty degeneration or decay of its muscular walls. Dr. Markham, adopting Dr. Quain's memoir as his starting point, gives us a very full summary of the present state of our knowledge on this subject. Amongst the recent additions to this department, we find the mode of formation of blood-clots in vessels, and their various effects; we have also been taught to observe the separation of portions of morbid deposit from diseased valves, which, passing into the course of the circulation, block up blood-vessels, and produce disastrous structural changes. The nature of the so-called metastasis associated with cardiac inflammation, has recently been studied with advantage; whilst the production of endocarditis by the use of certain articles of food, as described by Dr. Richardson, is a still more novel and more important step.

But, whilst we thus indicate progress in physiological and pathological knowledge, we must not forget that the therapeutics of our subject have not been neglected. The treatment of cardiac inflammation has been made the basis of much of

that discussion which may be described as on the one side asserting that bleeding and mercury are sheet-anchors on which alone we should rely, whilst, on the other side, it is as boldly stated that, if the patient do not die from the effects of disease, he will have some difficulty in escaping those of the so-called remedies. As Dr. Markham has taken a prominent lead in this discussion, we find him, in the volume before us, contributing much valuable information to the subject. We might add other examples of knowledge acquired, or in progress of acquisition; but we have mentioned sufficient to show that, though the last fifteen or twenty years have witnessed the production of works on diseases of the heart by different authors, there is still not only room for a work which will bring our information down to the present day, but that such a work is absolutely necessary.

The call for a second edition of Dr. Markham's book within a comparatively short period is sufficient evidence of the manner in which the want has been supplied by him. We might extract many passages confirmatory of the high opinion which we have been led to form of the result of Dr. Markham's labours: we shall select a few illustrative rather of the preceding observations. There is much of practical truth in the following remarks *à propos* of the cerebral complication of pericarditis:—

"The old doctrine of metastasis gives no explanation of these [cerebral] symptoms. It is possible, as has been suggested, that the poisonous agent in the blood may act directly upon the nervous centres; or that the excitement may arise in a secondary or reflex manner, as a consequence of the local disease. But it seems more in accordance with modern pathology to consider that these nervous derangements result from profound alterations in the condition of the blood, which have been produced either by the disease, or by the treatment adopted for its cure. I have already observed, that since venesection and mercury have ceased to be considered as necessary remedies in pericarditis, the nervous symptoms alluded to seem to be less frequently met with by practitioners. The furious delirium which sometimes arises in pericarditis may be regarded in most cases as the consequence of exhaustion of the nervous power. It is in the advanced stages of the disease, indeed, that these nervous symptoms supervene." (P. 23.)

The following are given as the symptoms dependent on the formation of clots in the heart. They should be borne in mind; for there are not a few cases of sudden death which cannot be otherwise explained than by supposing death to have resulted from obstruction of the heart's action by clots.

"The *symptoms* depending upon the formation of clots in the heart differ according to the situation of the clots. When they obstruct the circulation through the right side of the heart, the return of blood from the systemic veins is prevented; the blood does not pass to the lungs for aëration, and, consequently, arterial blood is not supplied to the different organs. Death consequently results, in such case, rather from syncope than from asphyxia. There is also something very remarkable in the extremely painful 'cardiac' kind of dyspnœa which attends this affection; it differs from all ordinary kinds of impeded respiration. The formation of the clot in the left side of the heart is indicated chiefly by signs of extreme congestion of the lungs—of ordinary congestion of the lungs, expectoration of mucus and bloody frothy mucus. In this case, if the patient dies, it is rather from coma than from syncope." (P. 76.)

Dr. Markham indicates in the following remarks how necessary it is to watch the effects of valvular disease, rather than to waste time and attention on the lesion itself which is beyond remedy.

"It is of infinitely more importance for us to ascertain the fact, that a murmur, indicative of organic lesion of some of its parts, exists in the heart, than to know *where* the murmur takes its rise. The fact of the existence of the lesion being determined, our treatment of the whole train of general symptoms which exist, either in coincidence with, or as the consequences of, the cardiac lesion, is in no way assisted by a knowledge of the exact situation of the disease which produced the symptoms. In cases, for instance, of chronic valvular diseases, we are not called upon to treat the valvular disease itself, but to deal with the symptoms which are its natural consequences; and in acute diseases of the valves,—associated with rheumatic fever, for example,—the actual situation of the endocardial disease in no way whatever regulates our treatment of it." (P. 105.)

We shall conclude our extracts with the following remarks, which show that, though our author entertains strong opinions on the abuse of bleeding and mercury in the treatment of inflammation, he is not the less disposed to adopt these remedies when they can be judiciously applied.

"Those two prime remedies, bleeding and mercury, once thought so powerfully efficacious in arresting inflammation, have been generally condemned by modern experience as useless and inexpedient, and are not now resorted to for that object. We cannot, indeed, expect to remove the cardiac inflammation by the use of any violent medicinal agencies specially directed to it.

"But that both bleeding and mercury are remedies often of great utility in the course of the inflammation, I do not doubt for a moment—venesection, judiciously practised for the special object referred to under the head of pericarditis, viz. relief of any accompanying pulmonary and cardiac congestions; and mercury used as a promoter of the healthy secretions of the different organs of the body. I have already insisted upon the great service rendered by moderate bleedings, in congestions of the heart and lungs, in whatever way the congestions may have been produced; and have no reason whatever to doubt their utility when practised in the congestions which arise, incidentally, during the progress of endocarditis." (Pp. 155-6.)

The remarks which we have made and the quotations which we have given will, no doubt, lead our readers to entertain the opinion which we have formed of Dr. Markham's work, viz., that it is one which will be valued equally by the student and the practitioner for the abundance of its sound practical information.

Progress of Medical Science:

AT HOME AND ABROAD.

SURGERY.

STATISTICS OF LIGATURE OF THE COMMON ILIAC ARTERY.

Since we gave, in the Journal for July 7th, an extract of the histories of three cases of ligature of the common iliac artery, we have met with a very complete statistical paper on the operation by Dr. Stephen Smith of New York, in the *American Journal of the Medical Sciences* for July 1860. Dr. Smith there gives in outline the histories of thirty-two cases in which the operation has been performed.

The literature, says Dr. Smith, of the operation of the ligation of the primitive iliac artery, considered in a purely scientific light, is confined to the last third of a century. The operation of Gibson, in 1812, was one of those accidental occurrences in which the operator resorted to the only remaining expedient to save his patient, quite regardless of the nature of his operation, the manner of executing it, or the consequences which might follow. Nevertheless, it was a bold and daring operation, and must for ever entitle the operator to the honour of first applying a ligature to this important arterial trunk. The procedure which Gibson was compelled to adopt, owing to the nature of the injury, and the fatal issue of his case, failed to demonstrate the feasibility and practical value of the operation, and nearly fifteen years elapsed before it was again attempted. The operation of Mott, in 1827, for aneurism of the external iliac artery, was not only the first of the kind for this disease, but it was the first which had ever been deliberately planned and executed. It had also the additional interest of being the first successful case. A new era now began in the history of this important operation, and during the thirty-three years that have since elapsed, it has been performed in at least thirty-one instances, averaging nearly one case annually. And it is an interesting fact to notice in this connexion that Mott's patient still lives, standing as a living monument of the skill and success of this eminent surgeon.

This collection comprises thirty-two cases, occurring, according to the residence of the surgeons, as follows:—In the United States, 15; England, 5; Ireland, 1; Scotland, 4; South America, 2; France, 2; Germany, 1; Russia, 2. There are occasional references by authors to other cases, of which, however, he has not been able to obtain any details. Guthrie states (*Commentaries*, etc., sixth edit.) that he has twice tied the common iliac with success; and although he frequently alludes to the subject in his lectures and writings, the only case he adduces is the one of which an abstract is herein given. Altmuller, of Germany, is reported to have performed the operation; but Professor Uhde, in his tables of cases of deligation of the common and the internal iliac arteries (*Deutsche Klinik*), places his case in the latter collection. According to Linhart (*Compend. der Chirurgisch. Operationslehre*, Wien, 1856, p. 93), Dumreicher has once performed this operation; but he gives only the method of operating.

The indications which have thus far led to the deligation of the primitive iliac artery may be divided as follows:—

1. For the Arrest of Hæmorrhage.
2. For the Cure of Aneurism.
3. For the Cure of Pulsating Tumours, which proved to be Malignant Growths.
4. For the Prevention of Hæmorrhage in the Removal of a Morbid Growth.

The histories collected by Dr. Smith are arranged in four groups; and, retaining this classification, we subjoin a brief outline of each case.

Group I.—*Eleven Cases in which the Common Iliac Artery was tied for the Arrest of Hæmorrhage.*

Case i. July 27, 1812. Dr. Gibson of Philadelphia performed the operation on a man, aged 38, whose common iliac artery had been opened by a musket shot. The limb was cold and insensible for several days; peritonitis soon appeared: secondary hæmorrhage set in on the ninth and continued till the fifteenth day, when death took place. The upper ligature had separated; the lower remained; there was no closure of the artery. (*Amer. Med. Recorder*, vol. iii.)

Case ii. Mr. Liston tied the common iliac half an inch above the bifurcation in a boy, aged 8, in whom secondary hæmorrhage had set in after amputation of the femur below the trochanter minor for necrosis. Vomiting and great depression followed; transfusion of blood was performed: death occurred in twenty-four hours. The ligature was found to be surrounded by effused lymph. (*Medical Gazette*, April 24, 1830.)

Case iii. Dr. Garviso of Monte Video tied the common iliac in a case of aneurism of the external iliac artery, in which sloughing and profuse hæmorrhage had occurred. Death took place in four hours. (*Annales de la Chirurgie*, Nov. 1844.)

Case iv. Professor Pirogoff performed the operation on a patient in whom secondary hæmorrhage had set in after ligature of the right external iliac artery for aneurism. On the sixth day gangrene set in; on the fifteenth, arterial hæmorrhage occurred; and on the sixteenth, the patient died. The common iliac artery was severed by the ligature; hæmorrhage had occurred from the upper end, in which a coagulum of blood and lymph was found. The lower portion was surrounded by a loose coagulum in which the ligature lay loose. The ligature applied to the external iliac had also divided the artery, and the lower portion was filled with a coagulum. (*Fricke und Oppenheim's Zeitschrift*, 1840.)

Case v. M. Deguise of Paris, in a case of ligature of the external iliac, proceeded to tie that vessel. In the dissection, the aneurismal tumour was accidentally opened and free hæmorrhage occurred; a ligature placed on the external iliac at once caused the vessel to give way, and the common iliac artery was tied: the femoral also was tied below the pubes, in doing which the femoral vein was opened. The temperature and sensibility of the limb remained natural: the ligature on the femoral vein separated on the fifth day, that on the common trunk on the sixteenth, and that on the external iliac on the eighteenth. The patient was discharged cured in five weeks. (*Gaz. Méd.*, May 1840.)

Case vi. Dr. A. C. Post of New York had a patient with a flat, hard, incompressible, but pulsating tumour in the left iliac region, which was diagnosed not to be aneurismal. Fluctuation being felt, a free opening was made, when the finger detected the aneurismal character; hæmorrhage occurred. The common iliac artery was tied. Pulsation ceased; vomiting set in; the patient died in twenty-four hours. (*New York Journ.*, vol. iii.)

Case vii. Dr. Uhde of Brunswick attempted (chloroform having been given) to tie the left internal iliac artery in a case of aneurism of the gluteal. The internal iliac was ruptured in the attempt to apply the ligature; four or five pounds of blood were lost; the common iliac was immediately tied. The symptoms were favourable for two or three days, when peritonitis appeared, and the patient died on the fourth day. The edges of the wound were separated: signs of peritonitis were present: the leg was œdematous, and the calf showed signs of incipient gangrene. (*Deutsche Klinik*, April 1853.)

Case viii. Mr. A. M. Edwards of Edinburgh tied the common iliac artery in a man, aged 27, in whom rupture of an aneurism of the external iliac had occurred, forming a false aneurism in the iliac region. Chloroform was given. With the exception of delirium tremens on the second day, the patient at first did well. The ligature came away on the sixteenth day: rapid fatal hæmorrhage set in on the twenty-fifth day. The peritoneum was adherent and dark; the common iliac artery was divided, both ends being plugged: on the external iliac was an aneurism of the size of an orange, in which was a recent rent. (*Monthly Journ. of Med. Science*, January 1858.)

Case ix. Dr. W. J. Holt had under his care a man, aged 24, in whom an aneurism of the sciatic artery had existed at least fifteen, probably twenty, years. Dr. Dugas tied the sciatic; but, as hæmorrhage occurred on the eighth and tenth days, the common iliac was tied. The peritoneum was wounded. Death occurred on the third day. There was no autopsy. (*Southern Med. and Surg. Journal*, October 1859.)

Case x. Dr. Willard Parker of New York tied the common iliac in a man, aged 21, who had received a stab, from falling on a knife, in the right groin. Profuse hæmorrhage occurred; and the common iliac and internal iliac arteries were tied. The patient, who was in a state of collapse from the loss of blood, died ten hours after the operation. The internal epigastric artery was found to be wounded; and the peritoneal cavity, which had been opened by the knife, contained some coagula.

Case xi. Dr. Gurdon Buck of New York had under his care a mulatto, aged 40, with aneurism of the left femoral artery at the middle of the thigh. The tumour rapidly increasing, the femoral was tied; and, as the vessel was wounded, ligatures were applied to the external iliac and the profunda. Several days after the separation of the ligature from the common iliac, hæmorrhage set in, and the common iliac was tied, under chloroform: the peritoneum was wounded. The symptoms were favourable until the seventh day, when hæmorrhage occurred, but was arrested by pressure; the ligature came away on the thirteenth day: on the fifteenth and sixteenth hæmorrhage recurred, and death took place on the seventeenth. The common iliac was divided and the ends were retracted: the peritoneum was not inflamed: a large clot extended from the right iliac fossa to the liver, and there was extravasation into the parts near the wound. (*New York Journal*, November 1858.)

Group II.—*Fifteen Cases of Ligature of the Common Iliac Artery for the cure of Aneurism.*

Case i. Dr. Valentine Mott, in 1827, tied the common iliac for aneurism of the right external iliac in a man aged 33. The circumflex ilii artery was wounded. The temperature of the limb fell, but was soon restored. The ligature separated on the eighteenth day, and convalescence was complete on the forty-fifth. (*Amer. Jour. of Med. Science*, vol. i.)

Case ii. Sir Philip Crampton, in 1828, tied the common iliac artery with a ligature of moistened catgut in a soldier aged 30, who had aneurism of the right external iliac. Pulsation in the tumour ceased, but returned in fifty hours, and continued till the eighth day, when the ligature separated, and pulsation became nearly as free as before the operation. Sudden and profuse hæmorrhage proved almost instantly fatal on the tenth day. The artery at the point of ligature was surrounded by an abscess; the internal coats alone were divided; the aneurism was of the size of a walnut; the artery for six inches above the sac was filled with a firm coagulum. (*Medico-Chir. Trans.*, vol. xvi.)

Case iii. Dr. Stevens of New York tied the common iliac artery in a case of aneurism in the right inguinal region. The peritoneum was wounded. Death occurred in ten days; signs of peritonitis were found.

Case iv. M. Salomon of St. Petersburgh performed the operation on a man aged 38, in whom aneurism of the left external iliac had followed a kick from a horse. Except some gangrenous eschars on the foot, the patient did well; the ligature separated on the thirty-second day; convalescence

was complete in two months. (*Zeitsch. für die gesammte Med.*, 1839.)

Case v. Mr. Syme of Edinburgh tied the right common iliac in a tailor aged 31, for aneurism of the external iliac, which at first presented obscure symptoms. Before the operation, incipient gangrene of the limb appeared. The tumour became smaller; mortification extended; amputation was performed on the third day, and the patient died on the fourth. There were signs of peritonitis; the external iliac and the femoral were both involved in the aneurism. (*Edin. Med. and Surg. Journal*, Oct. 1838.)

Case vi. Dr. Peace, surgeon to the Pennsylvania Hospital, had under his care a man aged 36, in whom an aneurism in the right groin had first appeared five months before, after exertion in lifting. The tumour was seated both above and below Poupart's ligament. The common iliac was tied; pulsation ceased in the tumour; the limb became cold and insensible, but recovered on the second and third days. The ligature separated on the thirty-second day. The tumour had diminished to the size of a filbert in five months; no pulsation returned. (*Amer. Jour. of Med. Science*, April 1843.)

Case vii. Mr. Richard Hey of York tied the common iliac artery in a man aged 41, who had aneurism of the left external iliac artery, occupying the whole iliac fossa. The temperature of the limb was but slightly affected. The ligature separated on the twenty-eighth day; and the patient was completely convalescent about the sixth week. (*Med.-Chir. Trans.*, vol. xxvii.)

Case viii. Dr. Garviso of Monte Video tied the common iliac for aneurism of the external iliac artery extending high up. The ligature separated on the thirty-sixth day, and the patient recovered. (*Annales de la Chir.*, Nov. 1844.)

Case ix. Mr. W. Lyon tied the left common iliac in a healthy man aged 53, who had a small aneurism in the inguinal region. Pulsation at first ceased, but soon returned feebly; the temperature of the limb was reduced, with numbness. Death occurred fifty-four hours after the operation. There was no trace of peritonitis; the tumour, lying beneath Poupart's ligament, was reduced to one-third of its former size; the parts in the track of the wound were healthy. (*Monthly Jour. of Med. Sciences*, vol. viii.)

Case x. Mr. Ellis Jones of Liverpool had under his care a coalheaver aged 34, who had felt something give way in the groin four months before, but did not notice a tumour for three months afterwards. The tumour was of the size of a cricket-ball above Poupart's ligament, on the right side; in fourteen days, it had enlarged, and filled the iliac fossa. The common iliac was tied, under chloroform. Pulsation ceased; the temperature of the limb was unchanged. On the second day, erysipelas appeared in the wound, and extended over the hip, causing sloughs and purulent collections. On the fourteenth day, the intestines appeared in the wound; and the patient died on the fifteenth. There was no peritonitis; the aneurismal sac was empty, and its coats gangrenous; the surrounding tissues, and the iliac and gluteal muscles, formed a soft pulpy mass; the common iliac was healthy. (*London Jour. of Med.*, vol. iv.)

Case xi. Dr. A. J. Wedderburn of New Orleans tied the left common iliac artery in a man aged 25, who had for three months had an aneurism extending above and below Poupart's ligament. Pulsation was arrested. On the second day, the limb was cold and insensible below the knee, with livid spots. On the fourth day, the gangrene extended to the hip. Death took place on the fourth day. (*New Orleans Med. and Surg. Journal*, May 1852.)

Case xii. Dr. W. H. Van Buren of New York operated on a man of irregular habits and very obese, aged 46, who had first recognised a tumour, apparently of spontaneous origin, four years previously. When first seen, it was of the size of a child's head at birth, occupying the fold of the right groin, and extending under Poupart's ligament. Operation was declined by the patient for six months, during which the tumour enlarged. The common iliac was tied, under chloroform. Pulsation ceased; the temperature of the limb fell, but soon recovered. The symptoms were favourable till the close of the second day, when, after a chill, the tumour, which had diminished, became tender and painful. Death took place on the fourth day. The tumour and parts around were the seat of inflammation and suppuration; there was no peritonitis; the artery above and below the ligature was filled with a firm coagulum. (*New York Jour. of Med.*, Jan. 1857.)

Case xiii. Dr. Stephen Smith of New York had under his care a healthy woman, aged 33, with aneurism of the right external iliac and femoral arteries. Previously, the external iliac had been tied by Dr. Lidell for aneurism in the same situation; the pulsation, however, soon afterwards returned. Dr. Smith's operation was performed nearly two years afterwards, on account of increase of the aneurism. The operation was performed under chloroform; not above an ounce of blood was lost; the common iliac was nearly as large as the aorta. Pulsation in the tumour ceased; the temperature of the limb was normal. The symptoms were favourable until the thirtieth day, when hæmorrhage took place, and recurred from time to time until her death on the forty-eighth day. The quantity of blood lost was very great, although the bleeding was frequently controlled by pressure on the abdominal aorta. The external wound was united, except at the lower point; in the iliac fossa was a large abscess, filled with grumous blood, and communicating with the artery where the ligature was applied. The artery was completely severed by the ligature; the upper end was partly filled by a coagulum, but allowed the escape of an injection thrown into the aorta. The aneurism was in an advanced stage of consolidation. (*New York Jour. of Med.*, March 1860.)

Case xiv. Dr. Warren Stone of New Orleans tied the left common iliac artery in a man aged 36, for an aneurism extending above and below Poupart's ligament. A silver-wire ligature was used. The symptoms for a time appeared favourable; but the patient died on the twenty-fifth day, of a return of dysentery, which he had had before the operation. (*New Orleans Med. and Surg. Journal*, Sept. 1859.)

Case xv. Dr. M. Goldsmith of Kentucky tied the common iliac in a labourer, aged 40, who had false aneurism from ulceration of the femoral artery in the groin, consequent upon pressure of the dislocated head of the femur, which was thrust under the artery. The dislocation remained unreduced for two months, when he came under observation, with a feebly pulsating tumour filling the iliac fossa, and extending to the middle of the thigh. In operating, the peritoneum was freely opened. The case progressed favourably at first: delirium set in on the third day, and continued till the fifth, when vomiting and death occurred. The wound was nearly healed; the peritoneum was adherent where incised, but nowhere inflamed; the ligature was in place; firm coagula extended up to the aorta, and into the external and internal iliacs; the femoral and external iliac arteries were perforated for an inch on the postero-external aspect; the head of the femur was in the cavity of the aneurism. (*Louisville Med. Journal*, Feb. 1860.)

Group III.—*Four Cases of Ligature of the Common Iliac Artery for the Cure of Pulsating Tumours simulating Aneurism.*

Case i. Mr. Guthrie had under his care a woman with a rapidly increasing pulsating tumour, which had appeared after injury to the hip, situated on the right buttock. It was of the size of an adult person's head. After ligature of the common iliac, the pulsation ceased; the tumour diminished one half in a month; in two months, the patient had recovered from the operation. In three or four months, the tumour again began to enlarge, and the patient died about eight months after the operation; when an immense encephaloid tumour was found to occupy the right iliac region. (*Med. Gaz.*, vol. ii, 1834.)

Case ii. Mr. Stanley operated on a man, aged 42, who had had pain in the left hip for four years. There was a tumour connected with the left ilium in about the anterior half of its extent, projecting principally from the abdominal surface; it extended to the crista ilii and to Poupart's ligament; the crista above was thickened, and a small piece of moveable bone was involved in the tumour near the anterior superior spine. Pulsation was everywhere marked, and a bellows-sound was present. Feeble pulsation in the circumflex ilii artery was noticed immediately after the operation; the limb became numb and cold, but recovered; vomiting occurred on the second, and death on the third day. The peritoneum shewed effects of inflammation; the parts of the wound was suppurating. The tumour was malignant, growing from the periosteum; through the anterior two-thirds the ilium was perforated with foramina, but in the remaining third the bone was broken into loose fragments. (*Med.-Chir. Trans.*, vol. xxvii.)

Case iii. Mr. C. H. Moore tied the left common iliac artery in a man who had a large, rapidly increasing, pulsating tumour in the left iliac region, which presented strongly the signs of aneurism. The patient appeared to be doing well for a short time, but died in a few days. A large encephaloid tumour was found lying in contact with the iliac arteries. (*Lancet*, Feb. 21, 1852.)

Case iv. Dr. C. T. Meier operated on a man, aged 59, who for two years had felt pain extending from the right groin to the knee, and had been disabled by a fall. There was shortening of the leg, and crepitus over the trochanter. The right iliac fossa was filled with a large pulsating tumour, over which the external iliac artery could be traced; the hip was much enlarged from Poupart's ligament to the sacrum, and from the crest of the ilium to the fold of the nates; pulsation was strong over the entire ilium, and at the sciatic notch; there was bellows-sound, which was diminished, but not stopped, by pressure on the iliac artery. The diagnosis was doubtful. After the operation, gangrene set in, and the patient died in twelve days. There was recent peritonitis, with slight intestinal adhesions; the large arteries of the pelvis were healthy. The right half of the pelvis was diseased; there was a residue of the bones, and some cavernous tissue of new formation; the acetabulum, and the head and neck of the femur, were destroyed. (*American Med. Gazette*, May 1859.)

Group IV. *Two Unclassified Cases.*

Case i. Dr. G. Bushe of New York tied the common iliac artery in a female infant, aged six weeks, who had an aneurism by anastomosis involving all the left side of the perinæum, the verge of the anus, the rectum, labium, vagina, and urethra. It had extended since birth, and hæmorrhage had recurred several times. The patient did well until the tenth day, when erysipelas of the chest appeared. On the thirteenth day, the ligature separated, and the tumour had nearly disappeared. On the twenty-second day, matter was forming at the knee, and the health was failing. Death occurred on the thirty-seventh day, from suppuration about the knee and renewed erysipelas. The common iliac artery was obliterated from the ligature to the bifurcation of the aorta. (*New York Med.-Chir. Bulletin*, vol. i.)

Case ii. M. Chassaignac had under his care a man who had an encephaloid tumour on the internal and superior aspect of the left thigh, extending to the thyroid foramen. Extirpation was determined on; but, in order to prevent profuse hæmorrhage, it was resolved to tie the common iliac, which was done under chloroform, and the tumour was removed. The operation lasted half an hour. After the operation, the pulse was small but regular; the patient had sharp pains in the knee and thigh; five hours after the operation, the heat of the limb was somewhat restored. In the night, the patient became feeble, had delirium, and died early the following morning. The peritoneum was not injured; clots had formed in the arteries above and below the ligature. (*Bulletin de la Soc. de Chir. de Paris*, 1851.)

Summary and Remarks.

Dr. Smith makes the following remarks:—

First Group. The following points of interest are presented:

1. *Disease or Accident.* Of eleven cases of deligation of the primitive iliac artery for the arrest of hæmorrhage, in two cases the operation was performed for wounds in the inguinal region, of which one involved the external iliac, and the second the internal epigastric, both proved fatal; one from secondary hæmorrhage, the other from exhaustion consequent upon the primary hæmorrhage; in one for secondary hæmorrhage from stump after amputation of thigh, death from immediate exhaustion; in two from rupture of an aneurism, one internally and the second externally, both fatal, the former from secondary hæmorrhage and the latter from immediate exhaustion; in three from hæmorrhage after ligation of the external iliac, one cured, the other two fatal from secondary hæmorrhage; in two from incisions into aneurismal tumours, both fatal from immediate exhaustion; in one from rupture of internal iliac, in attempting its ligation for aneurism of the gluteal artery.

2. *Result.* Of eleven cases, ten were fatal, one recovered, being a mortality of nearly 91 per cent. The success of this operation upon the primitive iliac artery, for the causes above assigned, presents a striking contrast with the operation upon the external iliac for the same class of diseases and accidents. Of fourteen cases of deligation of the external iliac artery for the arrest of hæmorrhage, Dr. Smith says eleven were successful and three fatal, the mortality being about 21½ per cent.

3. *Date of Death.* The earliest period of death after the operation was four hours; latest, twenty-fifth day; average eight days.

4. *Cause of Death.* Secondary hæmorrhage, four; immediate exhaustion, five; peritonitis, one.

A proper appreciation of the circumstances under which the primitive iliac artery has been tied for the arrest of hæmorrhage will lead the discriminating surgeon, notwithstanding the excessive mortality that has thus far attended its performance, to accord to this operation an important place among the resources of his art. In the immediately fatal cases the patient was already excessively prostrated by the hæmorrhage, and the operation has been performed when a fatal termination appeared inevitable; but even in these cases it has relieved the most threatening symptoms, and given promises of successful results. In the remaining cases the fatal issue has been due to causes unconnected with the operation itself, but referable to some intercurrent affection.

Second Group. On examining this group it appears that fourteen of the subjects of the operation for aneurism were males, and but one female; that the right external iliac artery was affected in eight cases, the left in six cases; one not given; that the mortality was 66⅔ per cent.

A just appreciation of the results in these fifteen cases would give the following conclusions:—Recoveries, five; permanently cured, one (Mott); temporarily, two (Salomon, Peace); unknown, two (Hey, Garviso); died, ten; fault of ligature, one (Crampton); condition of patient most unfavourable at time of operation, two (Syme, Van Buren); intercurrent disease unconnected with operation, one (Stone); connected with operation, three (Stevens, Jones, Wedderburn); local disease due to operation, one (Stephen Smith); cause of sinking and death uncertain, one (Goldsmith); attributed to operation, one (Lyon).

The result of the operation of deligation of the common iliac artery for aneurism, as compared with the same operation upon the external iliac, is worthy of notice. In ninety-five cases of ligation of the latter artery for aneurism, sixty-nine recovered and twenty-six died, being a mortality of about 27 per cent., or less than half the mortality of the same operation for the same disease when performed upon the common trunk. The cause of death in eleven cases, or nearly one-half, of ligation of the external iliac for aneurism was mortification of the limb, presenting a striking contrast with the same operation upon the primitive iliac, in which there was but one instance in eight cases.

Third Group. In this group of cases the operation was undertaken in ignorance of the true nature of the disease, although this was suspected in at least three cases, and a differential diagnosis was attempted. In Mr. Guthrie's case there was at first a difference of opinion among the surgeons who examined the tumour. Mr. Guthrie was doubtful on his first examination, but finally decided that it was an aneurism; Sir Astley Cooper and Mr. Thomas had no doubt of its being an aneurism, and Mr. Keate at first regarded it as a malignant tumour, but subsequently concurred in the opinion of his associates. In Mr. Stanley's case there was a preponderance of opinion in favour of the aneurismal character of the tumour. Dr. Smith can only learn of Mr. Moore's case that the disease was considered an aneurism of the external iliac. In Meier's case the question was decided, after a careful review of the various evidences, in favour of an aneurism.

Fourth Group. In Bushe's case, the disease was of a most formidable character, and the reasons which led this skilful surgeon to undertake its cure by so grave an operation were well conceived, as the result proved. Although this case is classified among those reported as unsuccessful, yet it does not properly belong to that list; for the patient had nearly recovered, not only from the operation, but also from the original disease itself, when she was attacked with erysipelas, to the remote effects of which she eventually succumbed. This case is also deserving of special mention, from the age of the infant patient, which was but six weeks old, being the youngest in the collection.

The second case in the group is a very remarkable one, and elicited much discussion in the Surgical Society of Paris as to the propriety of the operation.

General Considerations. Dr. Smith arrives at the following results with regard to the operation:—

Sex. Of thirty-two cases of ligation of the primitive iliac artery, twenty-seven occurred in males, three in females, two sex not given. The great preponderance of males over females is undoubtedly owing to the greater exposure of the former to the exciting causes of aneurism, as well as to local injuries.

Age. The ages of the patients are seen to vary from six weeks (Bushe) to fifty-nine years (Meier), as follows:—

Under 1 year - -	1	Between 30 and 40 -	10
Between 1 and 10 -	1	„ 40 „ 50 -	6
„ 20 „ 30 -	6	„ 50 „ 60 -	3

Disease. In twenty-four cases, aneurism directly or indirectly led to the operation. These tumours involved the fol-

lowing arteries: right external iliac, eleven; left external iliac, seven; femoral, one; gluteal, two; varicose, one; not given, two. In four cases the tumour was malignant, though simulating aneurism. The liability of the right external iliac artery to aneurism, as here shown, is very much greater than the left. In the cases of malignant disease, the right and left side were the seat of disease in the same number of cases.

Material of the Ligature. The ordinary ligature was employed in all the cases except two: that of Mr. P. Crampton, who employed catgut; and that of Dr. Stone, who used silver wire.

Artery Ligated. In seventeen cases the right primitive iliac was ligated, and of these three were successful; in thirteen the left primitive was ligated, of which one recovered.

Mortality. Of thirty-two cases, twenty-five died, and seven recovered, being a mortality of about 78½ per cent.; the mortality after ligation of the external iliac is about 28 per cent. Since the year 1845, the date of Mr. Stanley's operation, no successful case of ligation of the primitive iliac has been reported, though during that period of fifteen years the operation has been performed no less than fifteen times. It will be remembered that this period embraces the entire history of anæsthesia, and it is important to inquire as to the influence of these agents in producing this excessive mortality. The case of M. Chassaignac is the only one which would seem to warrant the supposition that the anæsthetic agent determined the fatal result. But the operation itself was in this case of sufficient severity to have led to a fatal issue, independently of any other agency; and although the chloroform, so long continued, doubtless added to the prostration of the patient, there is no evidence that of itself it was the producing cause of death.

The extreme dates of death after the operation in the cases where anæsthetics were given, are sixteen hours and forty-eight days, the average period of death was fourteen and a half days. The extreme dates of death in the cases where anæstethics were not given were four hours and thirty-seven days, the average being about nine days. It would appear, therefore, that those patients who were operated upon while under the influence of an anæsthetic lived longer, and consequently were less affected by the operation itself, than those who were not thus treated.

Separation of the Ligature. The longest period of retention of the ligature was thirty-six days, and the shortest eight days; the average being nearly twenty-three days. An examination of fifty cases of deligation of the external iliac artery gives an average of twenty-two days for separation of the ligature. An important distinction may be made between the successful and unsuccessful cases, in regard to the period of the separation of the ligature. It will be noticed that in the successful cases the ligature was retained much longer than in the fatal cases. For the former class the average period of retention of the ligature is twenty-four days, while for the latter it is but about seventeen days, thus leading to the important inference that the early separation of the ligature is an indication of danger from hæmorrhage.

Wound of the Peritoneum during the Operation. Of the nine cases in which the peritoneum was wounded, but one recovered. In four the wounds were slight (Guthrie, Pirogoff, Buck, Stone), of which one recovered. Of the remaining three, one had the local appearances of peritonitis (Pirogoff), the others had none (Buck, Stone). Of the five cases in which the peritoneum was freely opened, three died within twenty-four hours (Garviso, Post); one lived two days, and had local peritonitis (Stevens); one lived five days, no peritonitis (Goldsmith); one lived thirteen days, having severe peritonitis (Gibson).

It does not, however, appear certain that in any case a wound of the peritoneum has caused the fatal result, although it cannot be doubted that it is a serious complication, and one that should be carefully avoided. In the four cases in which it was freely opened the operation was performed without any special effort to guard this membrane. In the remaining cases the wound was accidental, and every precaution was taken to prevent its occurrence.

SPONTANEOUS CURE OF POPLITEAL ANEURISM.

Dr. L. Hodge exhibited the specimen at a meeting of the Pathological Society of Philadelphia. It had been removed from a patient of Dr. Pancoast. When first seen by Dr. Pancoast, the aneurism was about the size of an English walnut, pulsating in the popliteal space. The man was sixty years of age, and was broken down in health from a tight stricture of the urethra, causing frequent retention of urine, and consequent inflammation of the bladder. On this account, no operation was deemed advisable. Bellingham's compressors were employed for a time, but, after a short and unsatisfactory trial, were abandoned, on account of the uneasiness and œdema of the leg they occasioned. About two years afterwards, he had a chill, without any special cause that he knew of. From the time of this chill, the tumour ceased to pulsate. During the two years, its size had not varied in any marked degree; as soon as the pulsation disappeared, the tumour grew less; and last summer, when he died from the disease of his bladder, nothing could be felt but a hard cord. The femoral artery was free, and apparently healthy, as far as the superior articular branches of the knee; for two inches below this, it was a solid cord, and its diameter but a little greater than that of a normal artery in this region. The circulation appeared to have been perfectly kept up by means of the articular branches, which were all considerably increased in size. (*Amer. Jour. of Medical Sciences*, July 1860.)

LETTERS AND COMMUNICATIONS.

Letters or communications for the Journal should be addressed to Dr. Wynter, Coleherne Court, Old Brompton, S.W.

Letters regarding the business department of the Journal, and corrected proofs, should be sent to 37, Great Queen Street, Lincoln's Inn Fields, W.C.

British Medical Journal.

SATURDAY, SEPTEMBER 29th, 1860.

UNWHOLESOME DWELLINGS.

We are afraid that sanitarians have as yet accomplished but little practically towards the great end of giving good ventilation to the houses of the working classes. We spend tens of thousands upon inventions for keeping the Houses of Parliament in a state of only tolerable atmospheric purity; we build theatres that give the entire audience a headache within ten minutes of having entered them; we eat our dinners in a state of semi-coma in some of the best dining-rooms; and we shall go on doing these things with Anglo-Saxon stolidity for some time to come—how, then, can we expect to find anything like decent ventilation in our cottages and smaller houses of the working classes? Dr. Greenhow has been travelling from Dan to Beersheba in search of pure dwellings among our manufacturing population, and we are not at all surprised to learn that he cannot find them. How should he? If May Fair cannot command the luxury of pure air indoors, the purlieus of Manchester most certainly cannot be expected to do so. But what are we to say to the doctor's complaint, "That the neat new dwellings of the present day are far inferior as regards healthy ventilation to the rough, picturesque, but comfortless-looking old cottages, with their high-peaked roofs of thatch, wide hearths, and open chimneys"? Have we positively gone back of late years in the science of ventilation? We fear we must in a great measure admit the fact; but the responsibility of the retrocession must be ascribed to the greed of builders, rather than to an ignorance of the principles of the proper method of discharging foul air from our dwellings.

Our armies have taught us that, in summer at least, by far the best ventilated house is the dwelling of the nomad—the tent, the most primitive of tenements. Let us take this as the

primitive type of a human dwelling, and then let us compare it with the first row of workmen's houses we come across in our walks. There is "Sweating's Rents", for instance—a small court, closed at one end, and the houses but lean-to structures, standing back to back to another court. Down the centre of the thoroughfare runs an open gutter, augmented by the slop-pails of each house in its turn; creating, together with the cess-pools, a mephitic vapour, which is, of course, sucked into the windows. Thorough ventilation there is none; for the houses stand sullenly back to back. Light there is little; for the whole amount of this most invaluable agent must come from the lane-like court. This is the plan on which the houses of the working classes are constructed in all the large towns of the kingdom. Can we wonder that fever is so rife among us? We have wandered very far from the tent-type of house, it must be confessed; and "Sweating's Rents" houses a population that Arabs most certainly would not envy.

It will be urged, we know, that as long as the exigencies of great cities crowd thousands where tens only can dwell with safety, the evil cannot be helped. But we deny this conclusion altogether; and we point to the many model lodging-houses, both in London and in the provinces, as examples of dwellings constructed to meet the difficulties of urban life. If we cannot get air and space—the two are synonymous terms—horizontally, we must seek them perpendicularly. There is, we admit, a danger in this system, if carried to an extreme; but, confined within bounds, it is harmless. Some of the best model lodging-houses in the metropolis are six storeys high; the rooms are, comparatively speaking, spacious; the ventilation is good; and the accommodation admirable. Why should the narrow trench we have pictured as "Sweating's Rents", in which man, like so much celery, is blanched systematically—why should such arrangements as these true fever-traps be tolerated by the authorities, while the superior class of buildings have been found to answer so admirably? It is a singular fact, that the model lodging-houses about London have been fortified against the fever and diarrhœa which surround them like a sea, by the simple expedient of keeping them well supplied with good air; whilst many cottages, standing in the midst of an illimitable supply of the pure oxygen of our breezy downs, are and have been for generations simple fever-dens—such power has man of creating the conditions of health or sickness around him at his will.

It is impossible to estimate too highly the value of well constructed dwellings, with respect to the moral as well as to the physical health of the population; and Dr. Greenhow is doing real service to the cause of humanity in his onslaught on ill arranged habitations. We entirely agree with him that "the time is fast coming, when the healthiness of a house, as depending upon its internal arrangements, will enter very appreciably into the question of value." It does seem extraordinary that, whilst the law has by the Building Act provided very strict regulations with regard to the stability of buildings, and the means of rendering them less obnoxious to fire, it has entirely neglected to take any precautions against the inroads of a far more subtle foe—disease. We fearlessly assert that the community take more hurt from the bad influence of a row of back-to-back houses, than it does from a hundred defective party-walls; and that to secure a constant supply of air to our dwellings is a thousand times more important than to take the most stringent precautions against the spread of fire. When the Building Act again comes under discussion in the House of Commons, we trust that sanitarians will have a voice in its amendment as well as Mr. Braidwood; and that such provisions will be made for the future, as shall prevent the erection of any more "Sweating's Rents".

THE WEEK.

MR. STREATFEILD, in the last number of the *Ophthalmic Hospital Reports*, publishes some observations made by Dr. Macdonald of New York on the use of sunlight instead of artificial light in ophthalmoscopic work. Dr. Macdonald first employed sunlight a year ago, from want of facilities in examining by the ordinary method; but he now prefers it. He employs *convex* mirrors; it being obvious that the intensity of the light would be too great if *plane* or *concave* mirrors were used. The lenses which he uses are of glass, about one inch in diameter, with curves, one of four and one of eight inches radius; a disk of the silvering, of about one-twelfth of an inch in diameter, is removed from their centres. The examination is made as with the ordinary ophthalmoscope. Dr. Macdonald states that the fundus of the eyeball is seen of more natural colour and appearance, and that the field of the retina illuminated is much greater than when concave mirrors are used. Mr. Streatfeild observes, that in this country sunlight is too uncertain for common use; but he thinks it worth consideration whether the ordinary concave mirror might be adapted to sunlight use, by protecting the patient by screens and curtains capable of arrangement in such a way as to regulate the amount of light admitted. Mr. Streatfeild states that he once, in an ophthalmological examination, availed himself of the sunlight, which was partially obscured by a fog.

We have received a specimen page of a new medical periodical which it is proposed to publish in India. As we can make nothing of the contents of the page, beyond noticing their resemblance to rows of various iron utensils of straight and of curved form, we cannot give an opinion of their merits. From a notice in English on the other side, however, we learn that the *Akbare Tubabut* or *Medical Gazette* will appear when a sufficient number of subscribers are received; and that it is intended as a medium of communication between the native doctors in government employ and the native *hakims*. It is to be published monthly, in Oordoo. We believe it is to be under the guidance of the editor of the *Indian Lancet*. We wish the undertaking every success.

The fourth annual meeting of the Social Science Association commenced on Monday last, the 24th instant, at Glasgow. Lord Brougham, President of the Association for the year, delivered an able inaugural address, principally bearing on amendments in the administration of law. We understand that the attendance at the meeting is considered highly satisfactory in point of numbers. The Sanitary Science Department has been presided over by Viscount Ebrington; and several interesting papers have been read in it, of which we shall, if possible, give an outline on an early occasion.

Association Intelligence.

REPORT OF SPECIAL MEETING OF COMMITTEE OF COUNCIL.

Held in Birmingham, on the 20th instant.

Present:—Sir C. Hastings (in the Chair); Mr. Bartleet; Dr. Bryan; Mr. Cartwright; Mr. Fowler; Dr. Radclyffe Hall; Mr. Husband; Dr. Lankester; Mr. Norman; Mr. Pemberton; Dr. Richardson; Mr. Southam; Dr. A. T. H. Waters; Mr. Watkin Williams; and Dr. P. H. Williams.

Resolutions for the improvement and future management of the Journal were agreed to.

Charles Hastings.
Philip H. Williams, M.D., *General Secretary.*

Worcester, September 21st, 1860.

BRANCH MEETING TO BE HELD.

NAME OF BRANCH.	PLACE OF MEETING.	DATE.
Birmingham and Midland Counties. [General Meeting.]	Hen and Chickens Hotel, Birmingham.	Thursday, October 11th, 6 P.M.

THIRD LIST OF SUBSCRIPTIONS.

Dr. Williams will feel obliged if the Honorary Secretaries will forward any subscriptions they may have in hand, either to Sir Charles Hastings or himself, without delay, so that they may be published in the Journal.

Worcester, September 4th, 1860.

CORNWALL MEDICAL SOCIETY: ANNUAL MEETING.

The Annual Meeting of the Cornwall Medical Society was held on September 18th, at Webb's Hotel, Liskeard; R. W. P. Kerswill, Esq., in the Chair. There were also present: H. Andrew, Esq. (Truro); C. Barham, M.D. (Truro); J. L. Clark, Esq. (Saltash); S. Clogg, Esq. (Looe); T. Q. Couch, Esq. (Bodmin); A. Hingston, Esq. (Liskeard); J. Jagoe, Esq. (Liskeard); J. Kempthorne, Esq. (Callington); T. Littleton, M.B. (Saltash); W. Littleton, Esq. (Saltash); W. Marrack, Esq. (Liskeard); F. T. Nicholas, Esq. (Liskeard); A. Prideaux, Esq. (Liskeard); Dr. Sanderson; D. Thompson, Esq. (Launceston).

Election of Officers. Dr. Barham was elected President for the ensuing year, to act conjointly for this Society and the South-Western Branch of the British Medical Association at the annual meeting to be held at Truro in June 1861.

The following gentlemen were elected members of the Council of the Society for East Cornwall during the ensuing year:—D. Thompson, Esq. (Launceston); T. Q. Couch, Esq. (Bodmin); F. T. Nicholas, Esq. (Liskeard); and C. W. Chubb, Esq. (Torpoint).

New Members of the Association. Dr. Felce; G. B. Rosewall, Esq.; H. Andrew, Esq.; Alexander Paul, Esq.; and — Hill, Esq., were duly recommended as members of the British Medical Association.

Resignations of Membership of the Association were read from A. A. Davis, Esq., and W. T. H. Pattison, Esq.

The Audit of the Society's Accounts was entrusted to the care of A. Prideaux, Esq.

The Terms of the future Connexion of the Cornwall Medical Society with the South-Western Branch of the British Medical Association were then considered. The resolution No. 3, passed at the late meeting at Torquay, and printed at p. 654 of the Journal, was read to the members. C. Barham, M.D. (Truro); H. Andrew, Esq. (Truro); R. Q. Couch, Esq. (Penzance); R. W. P. Kerswill, Esq. (St. Germans); and Thomas Littleton, M.B. (Saltash), were appointed as a Committee to make the necessary arrangements with the South-Western Branch at Truro next year, subject to the following main conditions; viz., that an annual meeting of members be held in Cornwall; that the other arrangements shall, as nearly as may be compatible with connexion with the South-Western Branch, be made in accordance with the present laws of the Cornwall Medical Society and those of the South-Eastern Branch of the British Medical Association; that all associates of the Cornwall Medical Society shall have continued to them the local privileges at present enjoyed; but, in future, all new members must be members of the British Medical Association; that henceforth members of the British Medical Association do not pay the additional yearly 2*s.* 6*d.* for local expenses; and that such shall be due alone from associates.

Case. A Case of Diabetes Mellitus in a Child two years and a quarter old was brought to the notice of the members present.

The Medical Diaconate. On the subject of the medical diaconate, recently mooted at Torquay, the Secretary brought to the notice of the Society an advertisement printed in recommendation of chlorodyne, by J. T. Davenport, operative chemist, of 33, Great Russell Street, London, and said to be from the Rev. C. S. Aitkin, of Cornwall; which concluded by stating that he (the reverend gentleman) had found very great benefit from its use himself, and that he was now able to take duty as usual, after his life had been despaired of from apparently developed phthisis. Whereon it was remarked by a gentleman present, to whom the reverend gentleman's personal appearance was well known, that the Rev. C. S. Aitkin was one of the last men in the world he should have expected to have heard of as suffering in the manner described in the advertisement, as he was broad chested, and of an Herculean figure.

The subjoined extract from a recent communication by a gentleman at Penzance was read to the members:—"I am glad you did not favourably entertain the clerical proposals at Torquay. In the first place, the clergy are too apt even now to interfere with medical duties, and dictate for the poor of their parishes; and if they knew a little of medicine, they would dictate more; and lastly, they are addicted to vague theories, homœopathy, etc. *One-half of a large committee of a homœopathic dispensary in this town is formed of the clergy of the district.* They are Mesmerists, etc., all of which would render them unfit for duties proposed. As the subject was not countenanced, it was well, perhaps, it was dismissed as it was."

After some further business, the members adjourned to an excellent dinner.

Editor's Letter Box.

CHLOROFORM ACCIDENTS AND THE LATE COLNEY HATCH TRIAL.

Letter from Charles Kidd, M.D.

Sir,—I have to thank you for your very full notice of my imperfect paper on chloroform read at Oxford; but there is one little typographical error, page 748, half-way down, that may be corrected; it regards delirium tremens and chloroform. I said, "Of thirty-five deaths collected by me, I found nine probably due to intoxication or delirium tremens" (it is printed *forty*-five deaths). This is a very large proportion—nine in thirty-five; but nine in forty-five might be simply accidental. And, moreover, I had not, at the period of the Oxford meeting, collected so many as forty-five deaths; though, I am sorry to say, five more deaths from chloroform have appeared in the newspapers since then, and have been added to my list.

It grows to be a very serious and a very thankless question, this one of death from chloroform. My esteemed friend Dr. Richardson told us, at the Dentists' College, that he believed there have been three hundred deaths from chloroform. This, I fancy, is overstated. I think I have seen, however, about that number (300), during ten years steady attention to the subject, as hospital reporter, in the hospitals, restored to life, or rescued after they had been pronounced dead. I saw chloroform also extensively used in Paris, whither I was sent by the *Medical Times*, amongst 1,600 gun-shot wounds, in the Revolution, 1848-9. There is a good deal to be learned yet about chloroform; but it is by some quiet physician, who can carefully analyse, with Brown-Séquard, the crowd of nervous symptoms as they occur in accidents. We want the profession also to assist a good observer or two, or a good book on anæsthetics, with notes of cases of accident. The hospital reporter in a leading journal recently, who superseded me in this difficult study, and of course abused my book, was a flashy,

so-called brilliant practising barrister, who, it was thought, could write attractive popular articles on fatty heart and chloroform; but, unfortunately, did not understand the A B C of physiology. It is Whewell who has made the observation, that in the inductive philosophy, every induction requires some special phrase or word, and, once entangled in that word, it is next to impossible to dissociate the two. Hence gravitation and its induction; hence the secret of the word "phlogiston" in the inductions of the early chemists; hence the mischief that mercury every year works, and the horrible mutilations of mercury in syphilis, syphilis and mercury having been tied together in one of these unfortunate inductions. Not less mischievous does it now appear also in the general philosophy of the flashy aforesaid annotationists, who, in spite of all the best observers, upheld the induction that all deaths from chloroform arise from fatty heart or diseased valves. There is scarcely a particle of truth in it; but the general public believe it, and are frightened; and it will take years and years to disprove it. Chloroform, or anæsthetics—in fact, the most universal, and open, and glorious gift to science of the present century—is accordingly in journals now a sort of *bête noir*, that every one more or less abuses or undervalues. Morton lives in obscurity; but no glorification or praise are thought too great or too laudatory for chloroform in the shape of a secret patent medicine.

The subject of anæsthesia is a very much larger one than may appear to persons outside the profession. In the recent trial as to the alleged cruelty to lunatics at Colney Hatch, the point chiefly under discussion was, whether lunatics are different from other people, subject to "want of feeling", or anæsthesia, which was denied by the prosecution; the fact being, that the continental "alienist" journals have teemed of late with experiments to show that the inmates of lunatic asylums, cretins, idiots, imbeciles, lunatics, etc., examined with powerful galvanic batteries, exhibit a large proportion, about one-third (twenty-two in seventy-six cases at the lunatic asylum of Marseilles, for instance), who live and move about as totally anæsthetic as if under chloroform; and all these seventy-six patients exhibit more or less anæsthesia, due, no doubt, to congenital deficiency of the sensory ganglia. The jury in the Colney Hatch case arrived at the fact by a sort of instinct, and very properly found the prisoners not guilty.

I am, etc.,

Charles Kidd.

Sackville Street, September 24th, 1860.

Medical News.

BIRTHS, MARRIAGES, DEATHS, AND APPOINTMENTS.

** In these lists, an asterisk is prefixed to the names of Members of the Association.*

BIRTHS.

Of sons, the wives of—

Croft, Thomas, M.D., at Bracknell, on September 18.
Home, A. G., M.D., Edinburgh, at Portobello, on Sept. 18.
Marshall, Joseph, M.D., Southampton, on September 18.
Mawer, —, L.R.C.P., Bucharest, on September 8th.
*Moffat, Robert, M.D., Thornhill, Polmont, on Sept. 25.
Muriel, Charles E., Esq., Surgeon, Norwich, on Sept. 21.
Philson, William, M.D., Cheltenham, on September 14.
*Tuke, Harrington, M.D., Chiswick, on September 20.

Of daughters, the wives of—

*Bickersteth, E. R., Esq., Liverpool, on September 21.
Nash, Joseph, M.D., Box, Wilts, on September 22.
Sparrow, George W. P., M.D., 60th Royal Rifles, at Wellington, East Indies, on July 27.

MARRIAGES.

Alford, Robt., Esq., Newington, Surrey, to Georgiana, youngest daughter of George Greenwood, Esq., Surgeon, Ossett, Wakefield, at Thornhill, on September 20.

Chavasse, the Rev. William I., only son of *Pye H. Chavasse, Esq., Birmingham, to Anna G., daughter of the late Vice-Admiral Sir Josiah C. Coghill, Bart., of Belvedere, county Dublin, on September 19.

Dick, William, Esq., H.M. Customs, London, to Agnes G., only surviving daughter of the late George Espie, M.D., of Brousterland, Lanarkshire, on September 20.

Keal, John Thomas, Esq., Surgeon, of Oakham, to Anne, eldest daughter of the Rev. H. Harris, of Horbling, Lincolnshire, on September 19.

Sparrow, Henry W., Esq., Edgbaston, to Gertrude, youngest daughter of the late *John G. Crosse, M.D., of Norwich, on September 18.

*Williams, James, Esq., Surgeon, Holywell, to Charlotte S., daughter of William Scales, Esq., Upper Holloway, on September 18.

DEATHS.

Alexander, William, Esq., Staff Assistant-Surgeon, at Calcutta, aged 26, on August 7.
Barry, Joseph, M.D., Middleton, Cork, on September 18.
Brown. On September 10th, at Whitchurch, Salop, aged 8, John A.; and on September 16th, aged 6, Barbara D.; children of *John Brown, Esq.
Croft, C. Ilderton, L.R.C.P.Ed., Lawrence Pountney Hill, aged 48, on September 20.
Dyer. On September 12th, at Ringwood, aged 52, Susan Maria, widow of the late Thomas Dyer, Esq., Surgeon.
Large, Charles W. S., Esq., Surgeon, Islington, on Sept. 24.
Parkes, Thomas, jun., Esq., Surgeon, of Wood Eaton, near Stafford, aged 22, on August 28.
Price, Rees, M.D., at Ilford, aged 79, on September 19.
Weston, E. J., Esq., Surgeon, at Camberwell, on Sept. 14.
*Woodman, James, M.D., East Leigh, Havant, aged 75, on September 25.
Williamson, Benjamin, M.B., Assistant Surgeon Hydrabad Contingent, to Charlotte J., eldest daughter of the Rev. B. O'Meara Deane, Chaplain on the Madras Establishment, at Bellary, on August 7.

PASS LISTS.

Apothecaries' Hall. Licentiates admitted on *Thursday, September 20th*, 1860:—

Bennett, George J., Gateshead
Taylor, Daniel, Bury, Lancashire

The following gentlemen also, on the same day, passed their first examination:—

Barham, H. F. H., Maidstone
Barker, Elijah, Sheffield
Gale, Henry S., High Holborn
Hughes, Wm. H., Warrington
Iliffe, Robert, Coventry
Pitt, William, Willenhall

International Chemical Congress. A congress of chemists has just been held at Carlsruhe. It was summoned by invitation to meet on the morning of September 3rd, and to debate on the best method of expressing the composition of chemical substances in the symbolic notation. A large number of professors and others attached to chemical science responded to the invitation; they came not only from all parts of Germany, but also from France, Belgium, England, Scotland, Ireland, Russia, Sweden, Italy, Switzerland, Spain, and Mexico. During the continuance of the congress, about one hundred and forty assembled. The Grand Duke of Baden had placed at their disposal the Chamber of Representatives; and there the chemists met on the day appointed and on the two following days, and discussed in German, French, and English, the questions submitted to them. For the proper definition of these questions, a committee was appointed, who carried on their deliberations in the chemical lecture-room of the Polytechnic School. The sittings were presided over by Professor Weltzien of Carlsruhe, Professors Kopp and Erdmann, M. Boussingault, and M. Dumas. The Grand Duke gave the members of the congress a dinner in the museum, and free admission to the opera; and Professor Weltzien showed his hospitality in a more private manner. The public were admitted to the gallery of the Chamber of Representatives; and there was one small side gallery assigned to the few ladies who felt sufficient interest or curiosity to honour the assembly with their presence. During the course of the three days' discussion, it became evident that the time was not ripe for a general agreement among chemists on the principle of notation; but certain resolutions were passed, which, if generally conformed to, will cause any confusion to be avoided. It seemed to be the general feeling among those present at the close of the proceedings, that the International Chemical Congress had effected something in demonstrating this; but that its principal interest had been in bringing together for three days so many well known to each other by their scientific labours.